

MASSAGE TREATMENT
of
Symptoms which simulate Disease of
the Pelvic Organs in Women

RABAGLIATI

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*TREATMENT OF SO-CALLED OVARIAN
NEURALGIA BY AUTO-PIESTO-MYO-KINETICS.*



ON SOME SYMPTOMS WHICH SIMULATE
DISEASE OF THE PELVIC ORGANS
IN WOMEN ;

AND THEIR TREATMENT BY

ALLO-PIESTO-MYO-KINETICS

(M A S S A G E)

AND BY

AUTO-PIESTO-MYO-KINETICS

(SELF - MOVEMENTS OF MUSCLES UNDER PRESSURE)

BY

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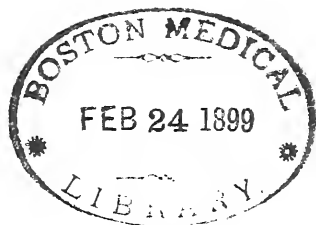
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PREFACE.



FOR a long time past, seven or eight to ten years, I believe, I have been, along with a large number of other members of the medical profession, no doubt, very much puzzled to explain, and especially to treat, those obscure ailments of women generally considered as neurotic. As to the idea of neurosis itself, that the complaints were more or less referable to the nervous system, I have long been sceptical. It seemed to me there were considerations rendering it more than doubtful whether the complaints were mainly or essentially referable to the nervous system. Real enough they no doubt are. Even those who apply to them the name neurotic admit this. I don't deny that the nervous system is often concomitantly or coincidently affected in the women who suffer from the ailments dealt with in the following pages. But gradually it has dawned on me, and especially during the last three or four years, that even when the nervous system was at fault, the disease did not primarily reside there. This monograph is therefore published to show the reasons, arguments and facts which have led me to quite alter my view regarding these ailments, and to hold that their primary seat is, not the nerves, but the muscles, or rather the muscle-sheaths; and that, along with them, the nerve-sheaths, the periosteum

or bone-sheaths, and many of the joints, particularly the false joints, were so frequently affected that the disease of these fibrous tissues was the main immediate element to be considered in the cases presenting themselves for treatment. Pushing the inquiry back, I have attempted to show that the clinical totality of the symptoms is due to general malnutrition, and that whoever attempts to handle it successfully must bear in mind that his problem is nothing short of altering the entire nutrition of his patient, by altering her diet, prescribing methodized exercises, and changing her whole habits of life. Only in this way is a cure to be effected; but whoever has recourse to this method of treatment will often be surprised at the quick response which many of his patients will make to treatment, although it must be sadly admitted that even then a few will be unbenefited, or only slightly relieved.

The clinical study of this ailment in women has emphasized a conclusion that had been gradually forcing itself on me as regards at least the great mass of human ailments—affecting men and women alike—that hardly any of them are purely local in character. They are, on the contrary, almost always (I had almost said *always*, without any qualification or limitation) general. Otherwise, the ailments for which we are consulted, even when apparently local at first sight, are so dependent on general causes—that is, on causes affecting the whole organism—that he alone may expect to deal with them effectually who bears this in mind, and who therefore, in addition to the use of local remedies, all very well, no doubt, in their way and in their place, employs means calculated to act on the general nutrition and organization of the body. The whole question of specialism, now so agitating both the pro-

fessional and the lay mind, and leading to a rapid alteration in the practice of medicine and surgery, depends on considerations of this kind, and cannot therefore be settled apart from them. For my own part, I am more and more convinced that the only sound and scientific and philosophical way in which a specialist can be manufactured or evolved is through familiarity with the general ailments of the body. In other words, he becomes the best specialist who has made the best generalist. I do not say a specialist cannot be made by beginning as such, continuing as such, and ending as such; but I do say that a man taking this way of training is very apt to take a narrow view of his calling and of his specialism.

If he becomes a gynæcologist in this way, he is too apt to look at all a woman's ailments through her generative system; and I am quite sure that that is most disastrous both for him and, far more, for the woman whom he has to treat. Speaking generally, a woman does not become ill because her uterus and generative apparatus is out of order, but her uterus is out of order because she is ill. He who takes the former view of his case, tinkers at it with pessaries and supports, and talks of slight displacements which he is going to rectify by mechanical means. But the man who views the local ailment as the local expression or manifestation of a general condition is compelled, while not discarding the help of local remedies, to have recourse to general methods of treatment, which are slow, no doubt, but, if slow, are (when well managed) very sure, and are really the only ones on which reliance is to be placed. The one man, in short, aims at curing the woman by making her uterus right; the other knows the uterus will become right if he can cure the woman.

The same considerations are true, I believe, of all medical specialisms and specialities, including even that which is generally admitted to be *the speciality par excellence*, ophthalmology; but as I am not arguing the general question at present, I content myself by repeating that he who treats the uterus through the woman will do much better and be much more successful than he who treats the woman through the uterus.



TREATMENT OF SO-CALLED OVARIAN NEURALGIA BY AUTO-PIESTO-MYO-KINETICS.

THOSE who see much of the diseases of women are frequently consulted by persons who suffer in the following way: Women come to one—sometimes unmarried, sometimes married; but if the latter, very frequently without family, although even multiparæ may suffer in the same ways—complaining of a number of vague or not very definitely localized pains. Very often they say they have pain in one or other, or it may be both, lumbar regions, sometimes in the ilio-inguinal or iliac region—one or other, or both. Not infrequently the complaint is made by the woman that she is always tired, or that she suffers from headache. She nearly always has backache, which she often says seems to be connected with the lumbar pains, much as if the two were joined together by a line. The back and lumbar pain seems often to shoot down the thighs, and we are often told that while relief is experienced in bed, the pain is aggravated whenever she gets on to her feet. And if the patient, as often happens, is determined to fight against her pain and not to give in, it becomes more and more severe, and by-and-by quite intolerable, so that at last the sufferer is compelled, absolutely and quite in spite of herself, to lie down and rest, only to repeat the

same round of misery next day and the day after, till she is quite worn out. For, too often, rest does not do very much for her. Even in bed she has a vague and general feeling of fatigue and of dull aching; but the troubles are worse when she is up. The pains are also almost invariably alleged to be worse and much aggravated during or (for the most part) just after the menstrual periods, which, we are generally told, come too often and last too long. Women always, or almost always, attach much importance to this function. Not only gynæcologists, but all medical men, must have been frequently compelled to notice this, and to see how very much excited most women become when suppression or irregularity or excess characterizes this function.

Without implying that their anxiety is too great regarding this matter, I suppose that too much importance ought not to be attached to complaints of this kind. And yet in the cases under consideration I have come to regard the almost invariable statement of the sufferers as well founded, and to believe that they really do suffer much loss of power, lassitude, weakness, and also much aggravation of pain, from the drain of blood, and, I suppose, also loss of the perineural fluid circulating from the ventricles of the brain along the nerve-sheaths, which occur at these times. At any rate, sensible women, with no trace of hysteria, have told me this again and again in apparently the most perfect good faith, so that I cannot doubt that they really believe what they say. But even if this part of the evidence is discredited, enough remains in the other parts of the history to demand investigation, so that, if at all possible, relief may be given to the patient. For this purpose, of course, examination is made. A vaginal

examination in the case supposed, where the pain is referred to the iliac or lumbar regions and back, is often considered necessary. Very frequently, however, it reveals nothing. The os, cervix, uterus, broad ligaments, ovaries, and vagina appear natural. Sometimes it may seem as if there is some anteflexion or anteversion. Perhaps the patient herself suggests that some displacement has occurred, and may ask to have a pessary inserted, a desire which the gynæcologist may think it right to accede to. Very often its use has been suggested by a previous medical adviser. In some cases the insertion of a pessary appears to do a little good—the pressure and support it gives are comforting. But in other cases, and those the majority, it is of no use at all, and in some few cases it seems to aggravate the malady and do positive harm.

In other cases, the parts seem soft, swollen, and flabby on examination. Especially is this so in those who have borne children; and there may be leucorrhœa and endometritis, with subinvolution. Even in nulliparæ a mild degree of leucorrhœa is often found, and a less degree of swelling of the parts than in multiparæ may be detected. This state is well covered by a phrase which has now fallen into disuse, but which Boerhaave was fond of using when he spoke of ‘diseases of a lax fibre.’ Laxness, swelling, imperfect tone from imperfect nutrition—this is what characterizes these cases. Of course endometritis and leucorrhœa are to be treated in the usual way; but in many of the cases now under consideration nothing of any consequence can be made out by physical examination of the generative organs—nothing justifying, for instance, a diagnosis of endometritis.

At this point, it appears to me, a stage of great interest

in the medical history of the case begins. To the patient herself it is of the utmost consequence what line of treatment she is recommended to pursue. Unfortunately for her, and for the credit of the profession, there are, as a rule, as many different diagnoses made as there are different doctors consulted. One calls the case neurasthenia, another neurosis, or, as he explains to his patient, it is 'a nervous affection'—the illness is on her nerves, and she is recommended to fight against it. But as that is exactly what the woman has been trying to do, often for months, and sometimes for years, it is small wonder if this advice does not prove of much assistance to her. A third physician entitles the disease hysteria. Another says it is anæmia and general debility—which, indeed, are almost universally associated with the condition. In two very instructive cases I have known a diagnosis of 'colic' made; and, indeed, colic of the uterus, if not of the intestines, is from time to time associated with the malady. Owing to the soft condition of parts, blood oozes through the vessels into the uterine cavity; there it acts as a foreign body, setting up contractile, painful efforts for its expulsion, *i.e.*, uterine colic. Another medical man will say the case is one of 'displacement of the womb,' and he recommends the use of a pessary, which, however, the next doctor says is useless, and ought to be withdrawn, as, in his view, there is inflammation of the ovary or tube, with prolapsus, and of course pessaries will be far more likely to aggravate than to relieve such a condition.

Repeated attempts having been made at restoration of the prolapse, and repeated efforts to treat the ovaritis or salpingitis, the wretched woman, finding herself no better, wanders from surgeon to specialist, and from specialist to

physician, and from physician to electrician, and from electrician back again to the regular faculty, nothing bettered, but rather made worse after all her varied and expensive experience. At this stage she is probably ready, as the prospect opens up before her of becoming a chronic invalid, to listen to the suggestion which at an earlier stage she resolutely put from her, that she should have the ovaries removed.

Now I wish to make some observations on this operation. Before I got what, I feel certain, is a clearer insight into the true nature of these cases, I have several times performed the operation of oöphorectomy, or, as it has been termed, 'removal of the uterine appendages,' for the obscure pelvic pain I am describing, and the relief has in many cases been very marked. But I regret to say that, except in cases where coarse disease was present—as, for instance, cystic disease of the ovary (I am not, of course, at present referring to ovariectomy for cystoma), or salpingitis, or chronic ovaritis, with adhesion, or suppurative ovaritis (one case)—except in these and the like instances, the relief obtained from the operation has not been permanent. In a month, or in two or three months, or in six months, the pain has been back again and the patient as bad as ever. Occasionally the operation has been performed on one side, with the effect of removing the pain there; but in a few weeks or months a similar pain has begun on the other side, and it may even be that oöphorectomy has been suggested for its relief also. Even after this second serious operation has been performed, the woman (I have known such cases) complains of such pain as prevents her from doing her work. We flatter ourselves, probably, that it is not quite the same pain as before operation

—that the deep-seated pain in a spot which seemed to lie in the course of a line passing from the lumbar region in front, and emerging at the sacro-iliac-synchondrosis behind, so passing through the ovary itself—we imagine, and we say, that that deep pain is gone, and we suppose that therefore the patient is better. But if she can't move with comfort and do her work, she can hardly be said to have been really improved; and in the meantime the woman has been mutilated and unsexed—a very serious thing for her, as it sometimes prevents marriage, and if not, almost always renders her sterile. And besides that, I have thought, in one or two cases, that women have been introduced to new miseries from pain arising about the wound, and from adhesions of the stumps to neighbouring parts, and so on. I have never seen death ensue after these operations. It seems as if such a calamity would be an unpardonable result from an operation undertaken for a disease which never proves fatal in itself. But I have known long convalescence and long-continued suppuration supervene on oöphorectomy, so that, what with her pain and what with other causes of reduced health, I have sometimes thought the last state of these women worse than the first.

I do not know how it may prove in the future, but I have so very strong an opinion that the vast majority of oöphorectomies performed, that is, simply for the relief of what has been called ovarian pain, and not for veritable adhesive inflammatory disease of ovaries or of appendages—I think so strongly that the vast majority of these operations has been unnecessary, that I can hardly conceive the possibility of my being induced to perform one of them in future. It seems to me it will have to be a very strong case indeed that will induce me to operate again. I think I can explain

how it is that relief is often experienced as the first effect of such operations; but the explanation, as will appear later, also indicates a better way in which the same indication can be accomplished. I believe, indeed, that more relief has been obtained by my operation of cutting down on the umbilicus, rawing its edges, and bringing them together, than from oöphorectomy. And, of course, this is not a mutilating operation like the other, so that at least we can say that, if the woman is not cured, she has not sustained any permanent damage. But some of my cases have been permanently cured by the operation on the umbilicus. Nevertheless, I incline to the view that in future the number of cases in which it will be considered proper to perform even this non-mutilating operation will be few, and probably confined to those instances in which, from injury, straining in parturition, or in lifting weights or such causes, it appears certain that the umbilicus has been strained to too great patency; to cases, that is, of commencing or of completely formed umbilical herniæ. And, as in the case of oöphorectomy, I think a complete explanation can be given why an operation on the umbilicus, which at first sight seems such an incompetent and inconsequent and absurd proceeding, is often of so great, and occasionally even permanent, benefit.

But before saying any more on these points, I should like to proceed further with the examination of the woman who comes to us for help. Suppose a case. A woman complains of iliac pain on both sides, but especially on one. Careful examination makes out nothing, but perhaps some anteversion of the uterus, which is, let us suppose, freely movable and not too large, and, if swollen and flabby, is only slightly so. In such women it will always (or, at least,

almost always) be found that firm pressure over the seat of complaint elicits pain, and if we pursue the inquiry without preconception or prejudice, we find that the oblique muscles of the abdomen in that situation are very tender. Besides that we can make certain of this by firm pressure, we can also demonstrate it by asking the patient, when lying supine, to lift her head without using her arms. As this action puts the oblique muscles on the stretch, it is often of itself sufficient to cause pain ; but if not, pressure in the iliac or lumbar regions while the muscles are tense demonstrates it quite certainly. The pressure is not made so deep or firm as to reach the ovaries. Pursuing the inquiry further, we find the same thing to be true for the recti abdominis muscles. These, as is well known, are made in compartments, formed by three or four transverse striæ, and it is generally the case that not all of the compartments are tender equally. Some are so more than others. Sometimes it is the upper compartments, sometimes the lower ones. But generally the middle ones are the most tender. And, further, if the umbilicus, where one of these striæ crosses the muscle, be caught up between the thumb and fingers of one hand, or, better still, between the opposing fingers of two hands, the tenderness elicited is greater than almost anywhere else, and is, in fact, as a rule, quite intolerable.

It was this fact which led me to propose and perform an operation on the umbilicus for the relief of such cases, especially as the umbilicus is usually somewhat patent, and it is found that the finger-tip can be deeply inserted into a minute orifice and the sharp edges of the opening felt by turning the finger a little round while it is pressed in. That operation has had the most strikingly beneficial immediate

influence in most cases. Some, unfortunately, have relapsed, but in some the cure has been complete and permanent. But leaving the question of treatment for the moment, let us go on with our examination. The obliqui and recti abdominis muscles, as also specially the umbilicus, having been found very tender, what about the quadratus lumborum? It also, if pressed, is found very tender, and its rounded edge can often be made out quite easily, and found to be exceedingly painful on pressure. When one has got so far, the remaining stages of examination seem to follow as a matter of course. When we have found certain of the muscles tender, we naturally go on to examine others. And gradually we find that the great glutei muscles, especially their sacral origins, are suffering greatly, and are very tender to pressure; so also are the glutei medii just behind the anterior superior iliac spines; and lower down, and at a deeper level, the glutei minimi, the pyriformes, and the gemelli muscles can be shown to be suffering in the same way. These last, however, are more easily reached by the finger on vaginal examination, the finger-pulp being pressed against the sacral origins of the muscles. Lower down the thighs, the quadriceps extensor muscles, especially the vastus portions of them, as also the adductors of the thighs, are likewise very tender. And the soleus, in its middle part, just behind the centre of the tibia, is always exceptionally so. Similarly with the gastrocnemius muscle; if it is caught up and pressed between the fingers and thumb, or, better still, between the opposing fingers of two hands, it is found to be very tender. Very often also broad pinching of the muscles of the back of the thigh shows that they also are tender. The adductors of the thighs are generally very painful on pressure. Further, the erector spinæ muscles on each

side all the way up will generally be found very tender on pressure, though the tenderness is usually more marked on one side than the other. If we go further, we find also the latissimus dorsi, teres major, infra-spinatus, and teres minor in the posterior wall of the axilla all very painful on pressure, as well as the pectorals, great and small, in the anterior. Posteriorly the tenderness is usually greater than anteriorly; thus we find the trapezius muscle on each side affected as well as the splenii. And so is the occipital portion of the scalp. The great exception to this is the sterno-mastoid muscles, which, though lying anteriorly (but are they anterior, considered from a developmental point of view?), are as tender, and often more so, than any posterior muscles. Again, the articulation of the mandible, if pressed with the finger-pulp while the mouth is opened and shut, will be found to be very tender, and so is often the zygomatic arch on each side. So likewise are the masseter muscles. I shall have to mention further on other sites of tenderness when speaking of the examination of the vagina and pelvis.

Now, I know that it is customary to account for the symptoms I have been describing by giving to them such a name as neuralgia, or neurasthenia, or neurosis, and by describing the women manifesting them as neurotic. In the mouths of some men—few, perhaps, but, still, an appreciable number—these terms, applied either to the symptoms or to the sufferers, imply a certain amount of reproach. If it is not implied that the women imagine their ailments, it is at least assumed that they exaggerate them—if not wilfully, then unconsciously. Other men, who do not go so far as this, seem yet to imply that there is no organic basis to the ailments; and the use of such

terms relegates the symptoms to the sphere of the unknown, to that of the intractable, or even occasionally to that of a kind of physiological metaphysics, in which such elements as the 'personal equation,' *e.g.*, bulk so large as to make each case a puzzle and study in itself, and to render treatment exceedingly difficult. If the ailment is a neurosis—if, that is, it depends in some obscure way on the nervous system—why is that system not more thoroughly investigated? Why is so little done for it, except to attempt to improve its general state by tonics? Why are not special nerves singled out for special examination and treatment? If the ailment resides in the nervous system, what is the nature of it, and in what part of the nervous system is it specially located—in nerves, or centres, or where? For my part, I have come to greatly distrust diagnoses represented by such functional names as neurosis. Very frequently they seem to be only marks of ignorance—or, at least, of vague, indefinite, ill-defined ideas—on the part of those who use the terms. As science advances, names, and the ideas connected with them, become more definite. And, conversely, when names are indefinite and ill-defined, that appears to suggest a certain absence of scientific accuracy and clearness. I am persuaded that that general principle is well illustrated in the present instance. I do not believe that the ailment is mainly a neurosis or nervous ailment at all. In my opinion, it is far more commonly and far more extensively a muscular than a nervous one. And if, therefore, a functional name is to be given to it, it ought to be myalgia or myosis, rather than neuralgia or neurosis. I am convinced that it is the muscular system which is at fault rather than the nervous. It is much rather the muscles which are tender to pressure than the

nerves which supply them. The whole course of the disease, the totality of its symptoms, proves this. If the nerves were mainly at fault, surely the skin over the muscles would be tender; but it is not so—at least, not so as a rule. It may generally be pinched quite firmly without eliciting any pain; but whenever the fingers and thumb go deeper, and grasp the underlying muscle, then the patient cries out with pain.*

Of course, it may be contended that all pain is the expression of nervous derangement; and this is no doubt true. But it is no more true (and no less so) of muscular pain than, say, of peritoneal or pleuritic pain, neither of which is called neurotic. The pain or tenderness in question is much more akin—in fact, it is so closely akin as to be indistinguishable often—to the aching (sometimes with discoloration) which the boy feels who, unaccustomed to it, was exercised his muscles too much in the gymnasium, or the man feels he has ridden too far, than it is to ordinary neuralgia. When we come to reflect upon our own sensations, to compare them with the descriptions given to us by others, and to make a comparison between both and the clinical facts which come before us, we find that aching and a feeling of languor, with, perhaps, stabbing or shooting pains from time to time, are characteristic of muscular sensations (of sensations, that is, felt mainly through

* In a few rare instances the nerves do seem to be the structures mainly at fault. I have seen at least one woman in whom I could make out no muscular or arthritic or bony tenderness. She told me that she had been diagnosed to have nervous rheumatism, or rheumatism of the nerves; and this, I believe, was her ailment, although no perineuritis rheumatica was to be discovered by the ordinary examination. She complained of deep-seated pain in the feet, also in her arms, besides general discomfort about the abdomen and trunk. She seemed to be suffering from neurosis. She made a good recovery.

affections of muscles); while the sensations characteristic of nervous affections are numbness, tingling, over-acuteness of sensibility, and, perhaps, lightning pains or flashes. So these women complain mainly of dull and heavy aching, with occasional sharp stabbing or shooting pains, which rather characterize muscular than nervous affections. Again, they often show discoloration of the limbs after slight exertion. Why is this? No doubt because the muscular tissue is soft, swollen, and flabby from imperfect nutrition, so that it has very slight resisting power; and so the fine muscular fibrillæ rupture under even slight exertion, the fine bloodvessels coursing among them doing also the same, so that extravasations of blood occur under the skin, which undergo changes of coloration preparatory to their reabsorption into the blood-current. The resisting power of the muscular tissue is low.

We have not yet agreed upon a measure of resistance in organic tissues. It seems to me we have in the case under consideration the simplest form in which the question of organic resistance can be presented to us. Surely it would be possible to say, after a comparatively short and easy inquiry, how much weight, for instance, ought to be liftable by a given quantity of muscular tissue when it is healthy. If the fibre ruptures under that amount of strain, it is evidently to be written down unhealthy. In a rougher way, when a woman's muscles become black and blue under a knock, or under an amount of exertion which no healthy woman ought to think anything of or to mind in the very least, obviously we have here rough tests to enable us to say, 'This woman's muscular fibres are in an unhealthy, under-nourished condition. It behoves us, by putting her on proper diet and regimen, to get her into a better state.'

The introduction of a scientific measure of resistance for nervous tissues is a more complicated affair than when the inquiry refers to muscular or bony structures. It would seem to be much more difficult to find a measure for brain-power or nerve-power than for muscle-power or bone-power. We do so in life roughly, no doubt, when we attempt to measure capacity for intellectual work or for bearing strain, and have no difficulty in saying that one man's power differs much from another's in these directions. But we have no encephalo-dynamometer or neuro-dynamometer. And as to pain and pleasure, the personal differences are so great that not only do we not possess either an algometer or a hedonimeter, but it seems almost impossible that we ever shall or can have either the one or the other. But as muscular contraction or joint-movement could be quite easily measured against the simpler manifestations of energy, such as weight-lifting and the like, it seems as if myo-dynamometers and arthro-dynamometers and osteo-dynamometers were close within our reach—at least theoretically, although practically no one appears to have yet constructed them.

However, the affection to which I have been referring appears to be located mainly in the muscles, judging from the considerations already advanced. I shall, indeed, have to show directly that there is frequently a co-existent neuritis or perineuritis which must be dealt with separately, and separately considered. But if the affection in question resides mainly in the muscles, the question remains: What is the nature of the muscular affection from which these women suffer? I believe it is rheumatic, and I suggest that it be named *perimysitis rheumatica*. I imagine that it is a passive congestion of the muscles, or, rather, of the

muscle-sheaths, due to a rheumatic state of the blood and system. And I would urge the following reasons for this view:

First, as it is said that rheumatism affects mainly or only synovial and serous membranes, I wish to point out that we invariably find associated with these states of the muscles a concomitant affection of the synovial membrane of the articulation of the lower jaw or mandible. I have already said that if the finger be pressed against this articulation and the mouth be opened and shut, the joint will invariably be found tender, sometimes extremely so. I say invariably, because I have never seen a case, among the many coming under my notice, whose mandibular articulation has not been tender on pressure when examined. It is true women do not know this till their attention has been called to it. But neither do they know that their muscles ache till their attention has been directed to it. In fact, they are often extremely surprised to hear it. They have been accustomed to believe (because they have been told so) that it is their nerves which are affected, and they find it very difficult indeed to realize that it is not so much the nerves as the muscles which are at fault. Some women, again, have been told the pain proceeds from the ovaries. These, in turn, find great difficulty in realizing that the pain is not ovarian, but muscular. In their minds the terms ovarian neuralgia or neurosis have to be translated into myalgia or myosis, and they experience great difficulty in making the transition. But the pain—there is no doubt or difficulty about that. The difficulty arises not about the pain, but about the seat of it, and about the causation of it, especially as the women, though they have heard about the nerves and about the ovaries, have hardly ever heard of the oblique

and the straight muscles of the abdomen, of the quadratus lumborum, and the rest.

The fact is, as every physiologist knows, we do not really always have pain in the places where we think we have it. Perhaps it would be better to say, we feel pain, but do not perceive its localization in any particular place. There are fallacies in this direction, just as there are in other directions in human experience. Probably the fallacies are fallacies of inference or judgment, rather than of direct perception, and those therefore may be correct who say the senses never deceive us. The baby that cries for hunger does not know that it is crying for hunger. It cries because it is uncomfortable. The nurse or attendant finds out that hunger is the cause of the discomfort, and assuages the pain by food. By-and-by, although the steps of the process have been forgotten, the child learns to distinguish the discomfort caused by hunger from discomforts due to other causes, and may rationally speak of feeling the pain of hunger. But the ability to do this depends on being able to distinguish one set of sensations from another. To put the matter as shortly as possible, we may say: Pain is a direct perception; localization of the pain is a matter of inference, or judgment, or reasoning. That we have pain is a perception on which we are never deceived; but that our pain proceeds from this or that source, or place, or structure, or tissue, or organ; that is an inference or judgment regarding which we may quite easily be deceived. This is not quite the same question as the question of reflex pain. A reflex pain exists when disease in one tissue or structure or place is referred to quite another tissue or place. Occipital headache, for instance, may be set up by a decaying molar tooth, and I

dare say there are other instances of reflex pain. To come to the point before us, ovarian pain may, for aught I know, set up sometimes pain which is supposed to be felt in the muscles of the back, and *vice versâ*. I don't deny this; neither do I assert it. There is, it seems to me, a very great deal to be said about reflex pain in the way of qualification and explanation, before we can quite know what we mean by the expression. To do this (even if I were capable of doing it) would lead me too far, and would unnecessarily complicate the present question. I content myself, therefore, by repeating that the question before us is not the same as the question of reflex pain, but it is this, rather: It requires experience to distinguish the locality or site of pain. A woman (or a man either, for that matter) who has pain, as she thinks, in a given place, may or may not be suffering from that place. When, in the instance before us, a woman consults us for pain, the cause of her pain may be in the ovaries, or it may be in the muscles of the back, or it may be in some other place, or it may be in all these places—the woman cannot tell. Experience is required to differentiate the site or seat of the pain. In fact, the belief many of these women hold, that their pain is ovarian, has very often been suggested to them by the doctor. They themselves, as a rule, keep much nearer to the facts by complaining, when they come to consult us, of pain in the back or elsewhere. It is we who suggest a cause. In fact, it is often our business to do so. It is because they don't know where the seat of their pain is that they come to us for advice. At least, that is one reason why they come. To say, then, that these women do not feel pain in the mandibular articulation is no proof that the articulation is not a source, or site, or cause of pain:

it is only a proof that the sufferers have not learned to distinguish the sources of their pain. The masseters lower down the jaw are also tender, but the sufferers don't know that, either, till it is pointed out and explained to them, although they may have experienced fatigue in eating, or even in talking (which actions involve the use of these muscles).

Second, not only are the mandibular articulations affected in these women—I have chosen them as examples of true and freely-moving joints—but many false joints are also affected. I never saw a well-marked case of myalgia (or what I call perimysitis rheumatica) in which the sacro-iliac synchondroses were not also involved. Both sides are always affected, although, generally, one is more so than the other. They are always tender to pressure, sometimes extremely so. Then the false joint between the manubrium and body of the sternum is nearly always tender; and so are several of the sterno-costal articulations, especially the second, third, fourth, fifth, and sixth left. If rheumatism affects joints, and if these joints are affected, is it not likely that the nature of the ailment with which they are affected is rheumatic in its character?

But, thirdly, various joints are very apt indeed to suffer from rheumatism, in the women whom I am describing, at some period or other in the course of the progress of the so-called neuralgia. I mean the metatarso-phalangeal in the feet, and the metacarpo-phalangeals in the fingers. Enlargement can often be seen and felt in those joints, and it is customary to speak of that swelling of the whole joint (say of one or more in the feet, making the person lame) as rheumatic in its character. And conversely, when we find this rheumatism present in the joints of the feet, whether in the tarsal, the tarso-metatarsal,

or the metatarso-phalangeal, we shall always find present, if we look for it, the myalgic tenderness I have described in the soleus, gastrocnemius, glutei, etc. Now, if the myalgia is apt to be associated with the intercurrent of rheumatism of the feet, and if, conversely, we never find rheumatism of the feet without also finding (if we look for it) myalgia of the muscles, I don't find it easy to resist the conclusion that the myalgia is a rheumatic affection—whatever great authorities may say.

Fourthly, another argument for the identity of myalgia with rheumatism of muscles, or perimysium, or of tendons, or of the sheaths of tendons, is that when myalgia is present changes take place in the heart just as they do in admitted rheumatism; only they take place much more slowly as a rule. Cardiac murmurs gradually appear in persons suffering from myalgia, and the steps by which they are formed can often be made out by careful observation. The fifth and sixth ribs on the left side become tender (*periostitis rheumatica*, I think), a passive congestion, I believe, taking place; and by-and-by, quite probably from anatomical continuity, the heart becomes affected. The cardiac action is often, at least, irregular, the person complaining of palpitation, and if examination be made, the fifth and sixth ribs are found very tender, and sometimes others also. Now, if the heart becomes affected in articular rheumatism, as it does admittedly, and if the heart also becomes affected, developing murmurs, in persons suffering from myalgia, as it does, then I think we have another very strong argument in favour of the view that myalgia is rheumatic in character.*

* Many of the symptoms present in what is called 'ovarian neuralgia' (*perimysitis rheumatica*) are also present in anæmia. And

When great authorities say, 'There is no evidence whatever that rheumatic inflammation attacks any but synovial and serous membranes' (Fagge and Pye-Smith), I ask, Have they studied the clinical history of myalgia? On what do they base their statement? On the fact that no lesions are found postmortem in the fibrous or muscular tissues? Suppose these lesions to be simply passive congestion, might they not have passed away and left no trace after death? Have they been sufficiently carefully looked for? The same authorities, in fact, themselves say: 'The synovial membrane is not, indeed, always injected, but there can be no doubt that in this, as in so many other tissues, redness may subside after death.' If redness due to rheumatism in synovial membranes may subside after death, why may it not subside in fibrous tissues after death also?

It is no doubt an easy way out of a difficulty to define

many of the arguments used to show that myalgia is rheumatism also suffice to show that anæmia is rheumatism, or, at least, is always associated with rheumatism. For my part, while I don't deny that iron may be absent or deficient in the blood in anæmia, I believe 'anæmia' is much rather caused by an excess of lactic acid, or by whatever acid causes rheumatism—uric acid, perhaps—than by deficiency of iron. All the places I have mentioned as being tender in 'ovarian neuralgia' are also tender in 'anæmia.' The so-called 'hæmic' murmurs found in 'anæmia' are, in my opinion, slight rheumatic endocardial murmurs, many of which, if slight enough, clear up and disappear. But many of them don't, but are as persistent and as destructive as recognised endocardial rheumatic murmurs. Accordingly, I treat 'anæmia' as I treat 'ovarian neuralgia,' by alteration of diet, etc., by-and-by administering iron, which is often, I believe, ineffectually given too early in the disease, and before the rheumatic condition has been combated and overcome. In this connection, see the instructive work of Dr. Haig, extending over the last few years, on uric acid and its effects.

rheumatism as a disease which affects only synovial and serous membranes. If this is so, it of course follows that a disease affecting tendons (tenonitis), periosteum (periostitis), perimysium (perimysitis), and false joints, as the sacro-iliac-synchondroses (pseud-arthritis) is not rheumatism; but to assume the truth of such a definition is to beg the question at issue. For the reasons I have given, that the mandibular articulation is invariably involved in persons suffering from myalgia; that so are the sacro-iliac-synchondroses and many of the sterno-costal joints; that intercurrent attacks of admittedly rheumatic character occur in persons suffering from myalgia (as, *e.g.*, in the tarsus, metatarsus, and phalanges); and that the heart is apt to become affected, and to develop murmurs in persons suffering from myalgia, just as it does (only more quickly) in acute rheumatism—for these reasons, and for others which I shall have to mention later, I am perfectly certain that myalgia is a rheumatic affection; and I also think that its seat is rather in the muscular sheaths than in the muscles themselves. For if the blood vessels and nerves *end* in the muscular fibres, they *course* in the sheaths. I think also that the associated affections I have mentioned in the periosteum, bones, cartilages, perichondrium, and tendons, as well as in the connective-tissue, are of a rheumatic character, starting with disordered nutrition; and, therefore, if I call these affections respectively *perimysitis rheumatica*, *periostitis rheumatica*, *ostitis rheumatica*, *chondritis rheumatica*, *perichondritis rheumatica*, *tenonitis rheumatica*, and *syndesmitis rheumatica*, I believe I shall be calling them by correct and illuminating names. It is, at least, I think, a good thing to have lifted these affections out of the class of neurasthenias, neuralgias, hysterias, and ovaralgias to

which hitherto they have too often been referred, and to have directed attention to the parts anatomically affected, and to the nature of the ailment from which they suffer. As to the nomenclature of the disease, although the termination *itis* has come to denote inflammation of the part named in the root of the word (as pleuritis, peritonitis, etc.), still, the original meaning of *itis* is 'of, or belonging to,' and hence *a rheumatic affection of, or belonging to, the perimysium* is what I mean to suggest by the name *perimysitis rheumatica*. It is, therefore, no valid objection to my argument or my nomenclature that acute inflammatory congestion can seldom be made out (it can sometimes, though) in this affection. Still, I have myself no doubt that it is mainly a congestive condition, passive for the most part, though liable to outbursts and exacerbations most acute as regards the pain experienced, even if not often associated with elevation of the pulse and temperature (though sometimes both are found high).

Perhaps the most striking argument that can be advanced to show that so-called ovaralgia is not, as a rule (for, of course, I don't deny that the ovary sometimes is the seat of pain), an affection of the ovary at all, but of the muscles, is this, that it is often found in men. This statement may excite a smile, but it is, nevertheless, literally true. True, it is not then called ovarian neuralgia, but it is comparatively seldom called by its true name of perimysitis rheumatica. We have it diagnosed now as hepatalgia, sometimes as bile-duct catarrh, sometimes as renal colic—yes, and sometimes as neurosis, the men suffering from it being put down as 'neurotic.' I have seen samples of all these different diagnoses both in consultation and privately, and have been able to put patients who had been suffering for

a long time on the road to the alleviation of their symptoms and to cure.

I remember, for instance, very well seeing a young fair-haired man who had been for a considerable time in the hands of the doctor. He looked ruddy, had no inability in walking, and the reason I was asked to see him was because the officials of the club from which he was drawing sick-pay believed he was malingering. The medical attendant, it was said, had declared that the ailment was neurotic. I had no difficulty in showing that the disease was real enough, and that the young man was not malingering. Most of the tender points to which I have referred were present. My diagnosis was rheumatism of the muscle-sheaths, and the treatment recommended, self-movements of the tender muscles under pressure—a treatment which, I believe, soon restored the patient. In another man I saw, a diagnosis of hepatalgia was made when the muscular pain was referred mostly to the right oblique and recti abdominis muscles. When I saw him he was alleged to be suffering from renal colic; but I had no difficulty in showing that the quadratus lumborum was very tender (and many other muscles also), and that the affection, whatever else it was, was mainly rheumatism of the sheath of that muscle. After a short course of properly directed movements he also recovered, the diet being also meantime altered.

It is difficult to believe that some of these attacks are not inflammatory, so acute is the pain. But the pulse and temperature rarely rise. Congestive I have no doubt they are, and from time to time the slow passive congestion rises into acute congestion. Patients complain of heat in the parts, very often alternating with slight perspirations, even when they have no particular attack on, and the parts fre-

quently feel hot to the hand of the observer, although the temperature and pulse are rarely raised. Indeed, in the chronic condition the general temperature is often subnormal. Nevertheless, I don't doubt that the local condition is congestive, and there is often increased local heat. Even when the general temperature is subnormal, and when a limb as a whole (say, for instance, the leg) feels cold to the hand of the observer, we may often on further inquiry find some of the muscles hot. I have frequently made this out in the case of the soleus muscle, and also the gastrocnemius, even in cases where the first impression communicated to the hand when it was laid on the skin of the leg was one of coldness. And these facts are often common to the sexes. There is no reason at all, when we come to think of it, why men should not suffer from perimy-sitis rheumatica nearly as much as women. There are, on the contrary, many reasons why they should. The main causes of the affection are improper feeding and indoor pursuits, leading to insufficient exercises. Now, in both these respects men are coming to be under conditions quite similar to those affecting women. The economic conditions of life often compel both sexes to live on a poor diet of bread-and-butter and tea; while the large and increasing class of clerks, warehousemen, shopmen, etc., perform duties and carry on occupations very similar, so far as their effects on health are concerned, to those performed by women in their domestic pursuits. One advantage the men and women in shops have over women occupied in household work, and that is, the cheerful interest of society. The working man's wife is often alone for the greater part of the day, and no doubt misses, without perhaps knowing it, the stimulating effect of seeing someone else performing

duties like her own. But in many other respects both sexes have too little exposure to the open air, and both suffer nearly equally from the dyspeptic troubles which are the real commencement of the affection. It is not now in England as it used to be, when the men, at any rate, followed pursuits which took them much into the open air, even if the women kept at home. Both sexes are now, in large numbers, living indoor lives, following similar pursuits, living under similar economic conditions, and it would be indeed a marvel if they did not suffer from similar affections.

As well as the muscles, tendons, etc., many of the nerves (or I should say, rather, nerve-sheaths) are also affected in this condition, notably the supra-orbital and infra-orbital nerves, the supra-spinatus, infra-spinatus, etc. Pressure on these in their course frequently elicits very great tenderness. Following the lines into which my argument has driven me, I propose to call these affections by the name *perineuritis rheumatica*. I suppose it is partly, at least, owing to facts like these, referring to tenderness of nerves in their course, that the idea has arisen that this affection is nervous essentially, or neurotic. Of course, I admit that tenderness along the course of a nerve is a neurosis. The definition of a neurosis would be that it was some affection (probably functional, and not organic) of some portion of the nervous system; and the name 'neurosis' would therefore cover all affections of this class. But tenderness along the course of muscles or tendons is not a neurosis or neuralgia, and should be termed, as I have said, *mysitis* or *perimysitis*, or at least should be called by the neutral name *myosis** or *myalgia*,

* Unfortunately the term *myosis* has a different signification, being connected with myopia, wherefore *myalgia* alone remains for use in this sense.

if analogues to neurosis and neuralgia are required. In the case of tendons it might be called tenonosis or tenonalgia.

I ought to deal with another reason why these affections have been thought neurotic or neuralgic, rather than myotic or myalgic. No doubt it has occurred to some readers of these remarks. Medical men are struck by what seems the capriciousness of these affections. At one visit a woman may be complaining bitterly of her aches and pains and miseries; at the next she may be comparatively well. But is this a proof that her affection is neurotic? To me it is a new corroboration of the truth of my reading, that the affection is rheumatic in character. For I cannot help being forcibly struck by the remarkable likeness shown in this respect to rheumatic fever, in which disease, at one of our visits, we find a joint most acutely swollen and inflamed, while at the next it seems perfectly well, another joint having taken on the action. In point of fact, the women who suffer from chronic myalgia are not so well (when they express themselves as better) as they think they are. Pressure on the places before referred to will always elicit complaints of pain, sometimes more, sometimes less. Their statement, however, that they are better, seems to me to prove the reality of the ailment and the good faith of the sufferers; for if it was all imagination, or delusion, or self-deception, or desire for fuss and notoriety, why should they admit that they are better at one time than another? It seems to me he would be as far from the truth who should call rheumatic fever a neurosis because in it the joint-affection often follows a capricious course, as most of us have been in calling this affection a neurosis because the women suffering from it now complain bitterly, and then seem to be comparatively

well. 'I keep finding out new tender places,' said a patient of mine once to me.

The truth is that this characteristic, which makes the women say at one time that they are quite well, and at another that they are very ill, is the consequence of a general law of organization too much overlooked or unperceived. It may be stated in these terms: 'Constant causes acting on the organism show themselves, not in constant, but in periodic effects.' The constant cause in the cases under consideration is the general malnutrition resulting (as I believe) in rheumatism, mainly of the muscles; and that shows itself, not in constant illness, but in attacks of illness and pain alternating with periods of comparative freedom from pain. Another form in which the law may be stated is this: 'The organism is now tolerant and then intolerant of a constant irritation.' The effect of the law is plainly perceived in all chronic illness—such, *e.g.*, as endometritis, asthma, bronchitis, gout, etc.—and is such that these illnesses, when watched, do not seem to be so much chronic as recurrent—at least, in their initial stages, the patients suffering from a succession of attacks, alternating with periods of comparative freedom from pain and distress. True, the patient is often not quite well in the interval, a judicious inquirer being able to discover signs of illness; but the patient himself often believes he is well. I have seen converse cases—they have happened to myself when I had less clinical experience—where the patient said: 'I seem all right, but I am sure I have the disease about me yet, and I am ready for another attack.' To that an ignorant or inexperienced doctor may reply: 'Nonsense! You must not imagine you are ill when you are not so. That is the likeliest means you can

take to make yourself ill.' Nevertheless, the sequel too often is that the patient has another attack, and not infrequently is attended by another doctor who may be supposed to know more of the law of the alternate tolerance and intolerance of constant irritations manifested by the organism.

Another reason why women suffering in these ways are often said to be neurotic is this: They are given to outbursts of tears, after which, perhaps, for a time, they are better; they are then said to be hysterical. But is this a proof of neurosis or hysteria? I do not think so. We are not all equally stoical under the suffering of pain. A few of us bear it patiently; the majority of us bear it as long as we can, and then have an outburst of impatience, becoming querulous, dissatisfied, discontented, and grumbling, till in time the fit passes off, and we settle down to make the best of it for awhile longer. A few of us cannot bear pain at all, but grumble incessantly, making all about us miserable, and making ourselves very much worse. I should be very sorry to say that women bear pain worse than men; my opinion, indeed, is exactly the reverse. I have often been struck by the immense patience some of them show—a patience, I am sure, much less commonly found among what is called too often the stronger sex. But it is a woman's privilege to burst into tears, after which she settles down for a time to bear her miseries as well as she can. To say she is neurotic or hysterical because she does so is as reasonable, or unreasonable, as it is to accuse a man of hysteria because when in pain his outburst takes the form of abusing his nurse, or saying nasty things to his devoted wife. Both sufferers are very sorry afterwards—the woman apologizing for what she

smilingly calls her 'weakness,' which, she assures us, she could not help; the man regretting very much his impatience, and saying he did not mean the unpleasant things he said. The fact is, that a woman suffering in this way is in constant misery. She aches from the back of her head and neck down to the joints of her tarsi; her very ribs and intercostal muscles and her abdominal muscles ache even when she breathes, so that if we watch her we shall find her unconsciously breathing as shallowly as possible, in order to avoid the pain of deep respiration. She can neither sit, stand, lie, nor breathe without aching; and after this has gone on for some time, and she has borne her sufferings as long as she can, some extra exertion or slight movement occurs, causing some deeper inspiration than usual, and the long patience is ended, her fortitude gives way in an outburst of crying, which, passing off in a while, brings her again face to face with the situation, which she again tries to put up with as well and for as long as she can. This is a very different state of things from that described in the quotation I make later in the masterly language of Dr. Allbutt from his book on 'Visceral Neuroses,' and it seems to me very unjust indeed to say that these women are hysterical. Neurotic perhaps they are, but it is a neurosis which gives them power, sprightliness, attractiveness, and capability, and which prevents their being dull, phlegmatic, and unresponsive to those emotions whose perception makes often the best part of life. Not selfishness, but unselfishness, characterizes many of these women; not a desire to get their own way, but the wish to make those happy who are about them; and not to make a fuss or obtain notoriety do they make their way to the doctor, still less from a selfish or malignant desire to waste their

husbands' or guardians' substance, but in order that by medical help they may be enabled to take again their place in life, and perform those duties for which they feel their illness unfits them. Of course, a few are different, and may without injustice be called hysterical, but the great majority are really ill.

As to the nature of the muscular affection, there is another very strong argument for considering the myalgia rheumatic in this, that it is frequently associated with acute rheumatism or rheumatic fever, and this in two different ways. First, some of these myalgic conditions appear to originate in an attack of acute rheumatism. 'I have never been right,' say some of these women, 'since I had rheumatic fever, so many years ago.' Or when one points out the rheumatic nature of the ailment, and the number of places which are tender, it is not unusual for one to be interrupted by the statement, 'Oh, I have had rheumatic fever.' Another relation between the general myalgia and acute rheumatism is that the latter seems occasionally to develop as an acute exacerbation in the course of the chronic, and generally somewhat mild, condition. Now, if chronic myalgia sometimes takes its start in an attack of acute rheumatism, as it does, and if, conversely, acute rheumatism is apt to occur in the course of chronic myalgia, as it is, I do not find it easy to resist the conclusion that chronic myalgia and acute rheumatism have some causal connection. And I suggest that the causal connection lies in the state of the body (whatever it is), which is common to both sets of ailments. They are, no doubt, synchronous, or, it may be, synchronous effects of a common cause, rather than cause and effect of one another.

Now, I have given several reasons for considering the

affection of which I am speaking a rheumatic one. But that it is an affection mainly of muscles, and not of nerves, appears also from this, that severe exertion makes these women very ill. Exertion, it is needless to say, is performed through the muscles. Put one of these women on horseback: the exertion will nearly kill her; she will ache all over, and so badly in head and limbs that I have known such women lie down on the floor after such exertion so fatigued as to be unable, or unwilling, even to take the trouble to dress for dinner. Of course, the voluntary muscles are governed by the will, and the will effects its purpose by means of the brain and nerves. But it is not the nerves which do the work—it is the muscles; and while aching is not confined to the muscles, it is they, and they mainly, which ache after such exercise; and it is they rather than the nerves which become stiff the following two or three days, and which often show discoloration under the skin, when extravasation of blood takes place into them from rupture of some of the fibrillæ and of the smaller bloodvessels. Women suffering in the way I am describing often become black and blue. The slightest knock or tap is often sufficient for this. Some of them even (though this is rare) found, or attempt to found, legal cases of cruelty against their husbands by showing alleged marks of injury, while all the time their tissues are so soft that a mere touch suffices to account for the condition without any violence at all. But this is not a result of nervous constitution; it is due to softness of the muscles.

I have dwelt at some length on the symptomatology and on the true character of this affection in order to rivet attention on the tissues which are specially involved. I have also been anxious, as will appear later, to show that

very much can be done for the relief and cure of these women. But this line of inquiry, if further pursued, will enable us to discover that not only the muscles I have named, numerous, large and widely extended as they are, and capable therefore of accounting for a great deal of physical distress—not only are these affected, but other perineal and pelvic structures are also often similarly affected; and to them is due some of the distress of the patients. I will name some of these latter. There is the sphincter vaginae muscle; if this is grasped between the thumb and fingers it is found very tender. So also are very often the levator ani, the transversus perinei, and the coccygeus, the last being very severely affected in many cases. Inside the pelvis, the obturator muscles and the obturator membranes are often exceedingly tender, also the pyriformes and gemelli muscles. I believe many of these tenderesses, but especially that of the obturator muscles and membranes, are often mistaken for ovarian neuralgia; but it is quite easy for a practised finger to distinguish between pressure on the ovary or tube and pressure on the obturator muscle or membrane. And the way in which women flinch from the latter is frequently much more marked than their objection to the former. Now, I have no doubt that these internal parts ache in many of these cases, as well as the external ones, and that they are the cause, far oftener than either the ovaries or the tubes, of the languor, the fatigue, the distress, and the pain of which the women so suffering constantly complain. Another structure which is frequently the cause of much obscure aching and distress is the anterior face of the sacro-iliac synchondrosis, and it is often possible to demonstrate how tender is the pelvic or anterior face of this structure as well as its outer or posterior surface, by

pressing the examining finger firmly against the former, while the fingers of the other hand are firmly pressed against the latter. This manœuvre causes extreme pain, and a practised examiner can easily distinguish between this pain and that caused by pressure on an adherent inflamed ovary or on a dilated Fallopian tube. The two conditions, in fact, often coexist, and can be readily differentiated from one another by pressing, for instance, at one time with the finger-pulp so as to make the ovary or tube impinge against the sacrum, and at another by missing the ovary and pressing firmly against the internal surface of the sacro-iliac joint, while the outside fingers are firmly pressed against its outer aspect. The former manœuvre causes a depressed, sickly feeling, accompanied by pain; while the latter causes the severe and shooting pain which we are accustomed to hear complained of when the mandibular articulation is firmly pressed. The women can, and do, easily distinguish between the two sorts of pain when their attention is directed to it; and, for my part, I feel better satisfied that a proper investigation of the malady has been made after this distinguishing diagnosis has been effected. An interesting point in the inquiry is that each time the two faces of the sacro-iliac joint are pressed the tenderness appears to lessen, just as rheumatic tenderness does elsewhere, which offers another proof, if one were required, of the rheumatic character of this affection. When, on the other hand, an inflamed adherent ovary is pressed the pain is not relieved, but, in fact, is increased by repeating the pressure; and this, no doubt (besides that we can directly feel what part we are pressing), assists us in differentiating ovarian or Fallopian pain from sacro-iliac or obturator or other rheumatic pain.

As to the etiology of this affection, if I am correct in my diagnosis of rheumatism, the causation must be the same as of that disease. No doubt the tenderness described at such length, the lassitude, the languor, and weakness of the patients are the manifestation of perverted nutrition. The women suffering in these ways will be generally found to have lived much upon tea and bread-and-butter. Often enough they have taken this sort of food three times a day for a long time, in some cases for years. Very frequently they have lost their teeth. It is quite sad to notice how many even young women have sustained this loss. I do not myself believe that the cause of the loss of the teeth and the general aching which coincidentally sets in are so much caused by the tea as by the bread-and-butter and cakes and sugar which are so often and to such an extent taken with it. Such women often tell us, indeed, that a more substantial diet makes them ill; and this, indeed, is often true of the way in which the more substantial diet is frequently taken. An *omnium gatherum* of beef and potatoes and Yorkshire pudding, with bread, and rice, sago, or tapioca pudding to follow, or pastry covering fruit, is well calculated to ferment in the digestive tract, to lead to an imperfect formation of chyle, along with the generation of gas in the stomach, and this in turn to an imperfectly-made blood, which cannot nourish the muscles, bones, or nerves properly; and consequently the blood, becoming loaded with waste and imperfectly-assimilated products, deposits its waste in the muscles, bones, and nerves, which cannot function properly, and cry out with fatigue on the least exertion. Nature's method of eliminating the waste, or one of them—for its deposition in muscle-sheaths, nerve-sheaths, and periosteum is another—

is by copious deposit of lithates from the urine. Patients suffering in these ways will always tell us that they have noticed this deposit from time to time. No doubt they generally add that they have not seen it of late, the fact being that many of them have lived for some time almost entirely on a carboniferous diet; but this leads them in the direction of other dangers to health. The very first thing to do, then, is to get the digestion into better order, and to eliminate the accumulated waste. For this double purpose I know nothing better than, say, a little bicarbonate or acetate of potash and nux vomica in half a pint of hot water thrice daily, an hour before food. At the same time the fermenting foods should be stopped. I find it useful to forbid bread, except at breakfast-time, and to put the patient on a free allowance of beef or mutton, fish, fowl, or game, with green vegetables and well-boiled onions, tomatoes, and such fruit as the apple, to take the place of bread at the later meals. It is well to restrict the fluid taken at meals, but I do not object to a small cup of tea or coffee with breakfast and the evening meal. This diet, continued for a few weeks, wonderfully restores the digestive vigour. I do not find it necessary to confine patients to bed in most cases, although, no doubt, the Weir-Mitchell treatment by rest and over-feeding combined with electricity is very useful indeed in many of them.

A good deal has been written as to the immediate cause of rheumatism. All, pretty well, are agreed that the beginning of the trouble is to be found in the digestion, but the exact form in which the process moves which culminates in rheumatism—on this opinions are divided. I myself incline to the view originally suggested by Dr. Prout, confirmed by the experiments of Dr. B. W. Richard-

son, and supported by a man so distinguished as the late Dr. Fagge, that the immediate cause of rheumatism is the presence of lactic acid in the blood. No doubt something is to be said against this view, and perhaps some of the experimental evidence is deficient in cogency. I have not gone into the question in this form, but a physiological experiment once made with my sanction threw a flood of light on the question. A patient of mine suffering in this way, and expressing a liking for sour or butter milk, was allowed by me to have it, and took for a few days a tumblerful three times a day. The disease was very much aggravated; the acidity of digestion was so great as to cause the greatest discomfort, and even pain, and I was afraid of the onset of an attack of acute rheumatism. If I suffered in this way I would not for a great reward take a tumblerful of butter-milk three times a day before food for a month; and I feel morally certain that most of the women suffering as I describe would be in bed with acute rheumatism after from four to six weeks of such a course of feeding. Butter-milk contains lactic acid, and it seems not unlikely that the myalgia from which so many women suffer is due to this acid (or perhaps to uric acid), generated by the starchy and saccharine diet, or the mixed diet, on which so many of them live.

Under the management before referred to, of an alkali with *nux vomica* in hot water before food, and a liberal allowance of beef and mutton, etc., patients begin to improve. The free supply of diluents increases the flow of urine, which soon becomes bright and clear, and after a time free even from mucous cloud, with a specific gravity of about 1012. The fermentative digestive troubles diminish and disappear, and patients feel lighter and more energetic

in movement. I have been told, after attention had been directed to the source of the pain in some of these cases, that patients actually felt as if the load and weight was being carried away by the free action of the kidneys. But, without laying too much stress on this, there can be no doubt that a great improvement manifests itself in many of these cases. No doubt a considerable amount of time is required for this purpose. The ailments have usually been coming on for a considerable length of time, and it is an inexorable law in therapeutics that ailments which have been coming on for a long time require a long time for their amelioration and cure. Four, six, or eight weeks, therefore, is by no means an unreasonable time for which these women should be advised to persevere in this course; and, indeed, they find out before long that it never again will be wise in the whole course of their future lives for them to return to their former ways and their former diet.

But another of the causes of the ailments described, no doubt, is too much confinement indoors, supplemented by insufficient exercise. Not, indeed, that these women have been idle. In addition to being improperly nourished, and insufficiently nourished, many of them have also been over-worked. But, unfortunately, over-work is too often quite compatible with insufficient exercise. If we watch the daily life of these women, we find them performing a multiplicity of duties, but all of them, or nearly all, performed indoors in domestic pursuits, which imply the use of a few muscles over and over again till they are over-fatigued, while other muscles have no proper exercise at all. It is useless, and too often a satire on the sufferers, to recommend to them out-door pursuits. They are too tired to walk or

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play games like croquet, tennis, or golf, and if they were not, they have not the means or the opportunity to do so. The most they can do (and they cannot all do that) is to become an in-patient in a hospital for six or eight weeks, if they are so fortunate as to have a mother living, or some friend to whom they can entrust the care of their families during their absence. After that, perhaps, they may be sent to the seaside for two or three weeks; and then they must go back to the old conditions which made them ill before, and are too likely to make them ill again.

But, besides altering the diet while in hospital and washing out the waste from the blood in the way suggested, it is a most excellent plan to recommend daily the use of a tepid bath (at, say, 80° Fahr.), ending with half a dozen or more big spongefuls of cold water, the patient to be well rubbed down in a bath-sheet by the nurse. This stimulates vitality, increases oxidation, promotes absorption of passive congestions, and greatly increases the vigour of the constitution. It also brings into action muscles which for a long time, sometimes for years, have not been properly exercised. Well-to-do women can have a masseuse to help them in these operations, and also in the active rubbing and movement of disused muscles. But even the well-to-do cannot get well unless they themselves perform methodized movements of disused parts; and the same is true of their poorer sisters. They must, so to say, work out their own salvation, for no pressures or movements by the masseuse approach in efficacy the well-directed exertions of self-movements. For this purpose each set of muscles must be dealt with separately and seriatim, and it is well, therefore, to give patients detailed instructions as to the movements to be performed. A very good plan is to begin with

the muscles of the lower extremities and of the back. If patients suffer much from headache, those of the back of the neck, the sterno-mastoids, and the articulation of the mandible, with the masseter muscles, may be first attacked. In most cases it is necessary to deal with all the muscles. But let us suppose an ordinary case in which the complaint is referred rather to the small of the back and to the lumbar regions than to the head. The course I recommend then is to begin with self-movements under pressure of the gastrocnemius and soleus muscles on each side. The general movements of the muscles are called auto-piesto-myo-kinetics (*αὐτός* = self; *πιεστός* = pressed or squeezed, from *πιέζειν*, to press or squeeze; *μῦς* = muscle; and *κινητικά* = of or belonging to movement, from *κινεῖν* = to move). These self-movements under pressure of the muscles of the calf are depicted in Photograph No. 1. The woman is recommended to press the thumb firmly on each side into the muscles. The point selected for movement-pressure is one just behind the middle of the postero-internal part of the tibia on each side, so that the patient firmly compresses the middles of the soleus muscles. The patient puts herself in a stooping position in order to do this, and then, firmly pressing, bends the knees as if sitting down, and rises up again, going through this movement, say, twelve times if possible. If she suffers very much pain in the process, she may be satisfied with six up-and-down movements to begin with, increasing in a few days or a week to nine, and by-and-by to twelve, and even twenty, as she becomes able to bear them (see Photograph No. 1).

The taking of the bath is, I think, a very valuable help to treatment. The soaping of the body itself, and the after-sponging; involves the putting into action of a large

number of muscles long more or less disused, and the very gentle friction involved in soaping is itself very useful. The theory of the action of the bath, and more especially of the self-movements under pressure, is that stiff muscles are most easily made supple and lissome by use. This use must not be put into action too much at once: that would increase pain and stiffness. That is the reason why I am so particular in instructing patients to begin with few movements, and to increase the number as they are able to bear them. If the pain and stiffness are much aggravated, even by a few movements, the proper advice then is to intermit treatment for a few days, two or three or four, and then to recommence. Sometimes the soft, flabby muscles, improperly fed and under-nourished, often for years (and this is frequently true even of the well-to-do), become ruptured with even slight exercise, and, extravasation occurring, ecchymoses take place, and the parts pressed on become black and blue. It is necessary to wait for reabsorption before recommencing movements, and in some cases this may take even as much as a week; but generally three or four days is enough. But bad as the immediate results often seem, the effort to move has almost always a good effect, and when in a few days movements are recommenced, either no new ecchymoses occur, or they do so to a much less considerable extent.

The first assumption, therefore, in the theory of treating these affections is that stiff muscles are made lissome by use. But the second is quite as important, and it is that motion must be alternated with rest. It is really neither motion nor rest which is the essence of the treatment; but it is the alternation of motion and rest. And while it is true that too much motion is bad for women suffering in these ways,

it is equally true that too much rest is most hurtful. I am sure I have seen (and not only in this direction, but in others also, more particularly in the treatment of sprains *e.g.*), great harm result from the advice often given to these women to take much rest. Long-continued lying on the couch or in bed does much damage, because it aggravates the malady, which is stiffness from disuse and insufficient and improperly directed exercise. Muscles stiffened and waste-laden, and therefore pained, from disuse, cannot be improved by further disuse. On the other hand, it is easy to over-exercise them. The advice proper to such women, therefore, ought to be that they should have such an alternation of movement and rest as will restore lost tone, increase vitality, and enable the muscles to function again properly and without pain. I am, therefore, very careful to tell sufferers that too much rest is as bad for them as too much movement.

It is possible that the time may come when, by the introduction of a measure of resistance and its application to living muscles, we may be able to say how much exercise should be used in any given case, and therefore to say accurately whether six or nine or twelve or twenty movements should be at first prescribed. At present each case must be taken on its merits, and the very pale and pasty-looking under-nourished woman must have fewer movements prescribed for her at the commencement than are recommended to her better-coloured and better-nourished sister. But, in fact, experience soon enables us to gauge the requirements of our patients, and even if extravasation occurs from too much movement, reabsorption will take place, and the movements may be recommenced. No great harm is, therefore, done, and the want of a measure of

resistance, though offering a theoretical difficulty, scarcely results in a practical one. In fact, the number of movements a skilled person will recommend is his estimate of the measure of resistance in that particular case. That he is not able to put it in the form of advice to raise so many foot-pounds so many times a day is a theoretical rather than a practical disadvantage.

I said that movement had almost always a good effect in these cases. It might have been better to have said, under certain ages—say, forty to fifty. Age, indeed, or, rather, the changes in tissue nutrition which accompany age, are some of the elements which would have to be considered in introducing a measure of resistance. Even over fifty I would not hesitate to undertake the treatment of a woman suffering in this way, provided she was able to do as she was advised. On the other hand, I have failed with older women. I remember very well one who at the age of sixty-three resisted all my efforts to benefit her. I found all the painful points I have described at such length. She had, besides, a painful urethral caruncle, for which she had been long and unsuccessfully treated before I saw her. I looked on that as symptomatic of the profound general malnutrition from which she was suffering. There was some albumin in the urine, and there were swollen and painful joints in the feet and hands—periostitis and arthritis rheumatica, no doubt. The albuminuria was, in my opinion and experience, no unusual occurrence in such cases. It is, on the contrary, a condition always to be expected. At that stage, or often at a previous one, the urine, even when not albuminous, is usually fiery acid in reaction, turning blue litmus to a bright brick-red.

This intense acidity of the urine (due, I believe, rather

to lactic than to uric acid, since I have not often found free uric acid present in these cases, although I have no wish to dogmatize on this point; urates are often present, I know) irritates the kidneys as the water passes through them. Nephritis follows, and results in albuminuria, with or without the presence of casts. Very soon the ureters take on the action, and they become catarrhal. At least, I believe this, though it is not quite easy to diagnose ureteritis. But cystitis constantly supervenes, and complaints of scalding urine, increased frequency of micturition, and smarting and burning pain, are very frequently made to us. On examination of the urine, we find bladder epithelium being shed in a soft and swollen condition, with very often muco-pus. Then, on further examination, a urethral caruncle is very often discovered.

At an earlier stage of my experience I used to view these caruncles as substantive affections, and to treat them surgically by excision, etc. But how often was one disappointed in one's treatment of them, and how frequently did one fail to relieve them! I do not now say they should not be treated surgically, but I do say that he who manages them in this way only, and does not view them as symptomatic of the nephro-cystitis, or of the nephro-uretero-cystitis higher up in the urinary tract, will be extremely apt, as I have been too often, to be grievously disappointed in the results of his treatment. At any rate, that poor woman had not been at all relieved by the long and painful surgical treatment which had been directed to her caruncle by skilled hands. When she came under my care matters had progressed too far. Very likely it was so when her next preceding attendant saw her. But at one time—say some years before that—I cannot doubt that she could

have been cured. Soon, however, her tongue became red, glazy, and dry, the mouth parched, the bowels obstinately constipated, the dysuria more and more distressing, the caruncle more and more painful, and the woman sank under a combination of symptoms which suggested to one of the medical men who saw her a suspicion of malignant disease somewhere about the digestive tract, but which could never be accurately diagnosed.

This state of general debility, rheumatism, albuminuria, with urethral caruncle, entire loss of appetite and digestive power, ending in gradual, or sometimes at the close rapid, sinking—these are the general final characteristics of those who suffer in earlier life from that perimysitis, perineuritis, periostitis rheumatica, often diagnosed as ovaralgia and general debility, and whose lives might, I am convinced, often be prolonged by ten or fifteen years for use and happiness did they receive better advice before it was too late. Another of the terminations is diabetes; or perhaps the development of cardiac murmurs, and all the symptoms which follow in their train. Sometimes malignant disease sets in, not infrequently starting in a tear of the os and cervix during parturition, the tear itself occurring because the improperly nourished parts had lost their elasticity, and, in place of yielding before the advancing head, had given way. I feel quite certain that if I had seen that woman of sixty-three at the age of forty-five or forty-eight, and had I known then what I know now (which, by the way, I did not), I could have given her such advice as would have eventuated in the prolongation of a useful and active life for at least several years.

After the movements under pressure of the gastrocnemius and soleus muscles have been made, as shown in

No. 1 of the illustrations, I recommend women to go on to the performance of movements of the knees, and of the quadriceps extensor muscles of the thighs. In some patients, indeed, who suffer greatly from headache, I find it advantageous to alter the order in which the pressure movements are performed, and to begin with movements of the back of the neck, and of the mandibular articulation, such as are shown in the later illustrations. But in ordinary cases, where the headache is not so severe as to incapacitate the woman, and so to compel us to deal with it first, the suggested order is the best; and movements of the knees and of the quadriceps extensor muscles of the thighs are performed after those of the gastrocnemius and soleus muscles. Illustration No. 2 shows these movements. The quadriceps extensor muscle is firmly grasped just above the knee, between the finger and thumb, so that the thumb presses firmly into the vastus internus portion of the extensor muscle, and the fingers into the part formed by the vastus externus. The patient then bends the knees, firmly pressing into the muscles the while, until she reaches a crouching position, then rising up again and repeating the movement for from twelve to twenty times.

The action is often very painful, the knees cracking and creaking, as rheumatic joints do when they are moved. But the movements must be persisted in, if improvement is to be effected, and the good effects of use are soon manifest, for after a few times movements are much less painful than they were at first, and when patients find this they are encouraged to continue. After these movements have been performed, patients may next attack the sacro-iliac synchondroses on each side. The movements proper to

this end are shown in No. 3 of the illustrations. The fingers are firmly pressed against the sacro-iliac synchondroses on each side of the sacrum, and the sacral origins of the gluteus maximus muscles are pressed against at the same time. The points of the thumbs and the backs of the fore and middle fingers are pressed against the false articulation; and here, also, great tenderness is discovered. For years often have these pseud-articulations been slowly stiffening, and when movements of them come to be effected, it is no great wonder that patients experience great pain. I have no doubt at all that the stiffness and tenderness which so many persons feel in the sacro-iliac synchondroses and in the sacral origins of the great gluteal muscles, are the foundation upon which an attack of 'lumbago' or 'sciatica' is built in subsequent years. Incidentally, therefore, free movements of these pseud-articulations will have the effect of obviating, or at least of postponing, such attacks in the life-history of these patients. It is difficult to get women to perform these movements. The pain is considerable, and improvement, it must also be admitted, is slow, so that they are apt to be discouraged. In one case, many months elapsed before perfect and painless freedom of movement of the sacro-iliac synchondroses was attained. The masseuse can do much in such cases by initiating and demonstrating the movements, but it remains true that only the woman herself can perform them properly, and that much greater benefit is experienced when she performs them for herself, than when they are done for her by the masseuse. As shown in illustration No. 3, the woman bends down and rises up a number of times, pressing the hands into the tender part of the back. From twelve to twenty such movements are required on

each occasion, and it is beneficial to rest a little after each performance.

Improvement in some cases is very slow, but is more rapid in others; and very often after the three sets of movements shown in the first three illustrations have been done twice a day for a week or two the patient begins to feel a little better; her limbs carry her better, and she feels lighter and less disheartened. She walks better. The best times for the movements are in the morning, before breakfast, when having the bath, and again at, say, five in the afternoon, about an hour and a half before the evening meal. The stomach ought to be empty, as these movements are impossible to ailing women after a meal, and are, indeed, not quite comfortable, even for healthy ones. Some women, however, are so ill that they can't go through the movements before breakfast, nor can they at first bear them twice a day. Such may be recommended to go through them—not more than six of each in such cases—about eleven o'clock in the forenoon, when some strength has been obtained from breakfast (about eight a.m.) A rest for half an hour after them is in this case very useful. Generally, in these cases it is that the ecchymoses appear, and that it is impossible to continue the treatment, an intermission for about three days being necessary.

In about a week, or perhaps two, after recommencing the movements, some improvement is experienced, and then the patient may go on to the early morning movements, and also perform them at five in the afternoon. After this course has been continued for two or three weeks, usually the catamenia are again due, and at the beginning of the treatment it is always necessary to desist during this period. By-and-by this intermission becomes unnecessary,

but at first it should always be resorted to on account of the exhaustion, dragging, and pain which invariably accompany this state. After the cessation the movements are recommenced ; and now, if she has not been able to resort to them sooner, it will be very useful to attack the-pained recti and obliqui abdominis muscles, and also the quadratus lumborum muscles.

Illustrations No. 4 show the modes in which these muscles are moved under pressure. The recti, as is well known, are divided into compartments by the transverse survivals of abdominal ribs, which cross their length ; and some of the compartments are more tender than others. Standing up now, the woman presses her fingers firmly into the recti muscles on each side of the middle line in front, and moves the body forward and backward six, or twelve, or twenty times, according as she can bear it.

For auto-piesto-myo-kinetics of the oblique muscles of the abdomen (self-movements of the oblique muscles under pressure), I generally find it best to move them along with pressure on the sacro-iliac synchondroses of the alternate sides ; that is, pressure-movement of the right oblique abdominal muscles with pressure-movement of the left sacro-iliac synchondrosis, and of the left oblique muscles with the right synchondrosis, as shown in illustrations No. 5. But of course the hands may be used to press the oblique muscles without pressure on the synchondroses, the body swaying antero-laterally, first to right and then to left. I often find it well to commence with the movements as shown in the illustrations, and then to use pressure-movements of the obliques alone.

For auto-piesto-myo-kinetics of the quadratus lumborum muscles (self pressure-movements of these muscles), not

shown in the illustrations, the thumbs are firmly pressed into the hollows of the sides, below the floating ribs, and the body is swayed laterally from side to side. The thumbs thus are driven into what are sometimes the posterior parts of the oblique muscles, and sometimes into the anterior parts of the quadratus muscles. Then the hands may be made to press the latter only, by fixing them backwards nearer the spine. Here also the tenderness is great, and here also the good effects of the treatment are somewhat speedily made apparent in the greater freedom and ease with which movements can be effected. The blood-supply to these muscles is increased, vitality is stimulated, and not only so, but a better quality of blood is made to pass to them by the alteration of the diet and by the general muscular movement increasing the feeling of life and activity in the whole system.

The gluteus medius muscles are generally tender also, and for their treatment the movements depicted in No. 4 of the illustrations are useful. The patient presses her fingers into the substance of the muscle on each side (the tensor vaginæ femoris is also often massaged by this action at the same time), and moves from side to side in the way shown for twelve or twenty times. The stiffness in these muscles usually yields quickly, and we do not often see extravasations due to rupture of fibrillæ in this situation.

The pressure-movements of the obliqui and recti abdominis (illustrations Nos. 5 and 6) muscles I have already dealt with. After these the erector spinæ can be moved under the pressure of the hands. These movements are not shown in the illustrations, but no great knowledge of anatomy is required for the effecting of movements directed to this end.

When the movements of the lower parts of the body have been carried out, the erector spinæ naturally leads up to those of the upper extremities and of the head and neck. No. 6 shows self-movements under pressure of the great and small pectoral muscles. The arm is brought across the chest and back again, while the pectoral muscles are grasped firmly between the thumb and fingers of the opposite hand. It is astonishing how tender these muscles often are; but they are not generally quite so much so as the *latis-simus dorsi*, *teres major*, and *infra-spinatus* muscles, which form the posterior axillary wall. Illustrations No. 8 show the actions required for the self-massage of these. The arm is moved backwards and forwards to its full extent, while the posterior axillary border is firmly held between the fingers and thumb of the opposite hand. Anyone who wishes to see how extremely tender these parts are has only to press his fingers firmly over the *infra-spinatus* muscle. The women seem to find it intolerably painful. The intercostal muscles are also very painful, so much so, indeed, that the women, as I have said, often breathe in a shallow manner to avoid the distress caused by the free movements of full inspiration and deep expiration. Of course they do not know why they breathe so shallowly, but it goes without saying that it must be bad for them, aggravating, by non-aëration of the blood, the evils begun by mal-assimilation of food. The vicious circle thus goes on, mal-assimilation leading to a waste-laden blood and to stiff and tender muscles; and the stiff and tender muscles becoming still stiffer and tenderer by the non-aëration of the blood, caused by the shallow breathing, which is unconsciously resorted to in order to avoid pain.

Number 9 of the illustrations shows self-movement under

pressure of the muscles of the back of the neck and of the trapezius, which the masseuse is shown to be grasping as the woman makes her movements. The insertions of the trapezius to the occiput, and of the sterno-cleido-mastoid muscles at the mastoid processes are generally very tender in those women who complain much of headache. They also frequently complain of a feeling of heat in the back of the neck, alternating often with outbursts of perspiration, which are at once a cause and an effect of still further weakening and lowering of the system. Illustration No. 11 shows auto-piesto-kinetics of the sterno-mastoid muscle. The muscle is put into action by moving the head downwards and forwards to the shoulder of the same side, the muscle being grasped the while between the fingers and thumb of the same or of the opposite side.

Illustrations No. 10 show pressure movements of the articulation of the mandible, the woman pressing her finger-tips firmly into the joints, while she opens and shuts the mouth. When women ache from talking, as they often do, or in the act of eating, the sensation is reflected from these joints and from the masseters. For movements of the latter, the fingers are pressed firmly lower down the face, the tenderest place being generally at a point about an inch above the insertion of the muscles into the lower jaw. There are other muscles which it is well to move under pressure, but it seems unnecessary to indicate them. Any man who knows his anatomy can demonstrate them to his patient or to the nurse, who will in turn show them to the patient. It is necessary, lastly, to have competent nurses, because pressure-movements of the perineal and pelvic muscles can be demonstrated only by them, or in their presence, and auto-piesto-kinetics of these muscles

must be taught by the nurse. They are best effected by the patient when she stands leaning forward over the edge of the bed and grasps the muscles seriatim in that position. The distressing tenderness of these muscles and of the obliqui and recti abdominis is the chief cause of the agonizing dyspareunia from which so many of these women suffer.

I should now like to consider for a little, under the head of treatment, a question to which I referred earlier in this essay, and to which I thought a satisfactory answer could be given. If the seat of the pain is, as I have suggested, the muscles, why should oöphorectomy relieve it, or how should an operation on the umbilicus generally relieve it and sometimes cure it? The explanation appears to me to be simple. The disease is, if I am right, essentially one of debility. There is a passive congestion, as I conceive it, of the circulation in all parts, but especially in the muscle-sheaths, nerve-sheaths, and periosteum. Occasionally this passive congestion rises into subacute or acute congestion, when the pain may become very severe, and by its shooting, stabbing character remind one of acute inflammation. Now, when repair takes place after the infliction of a surgical wound in the muscles, an increased activity occurs in the circulation of the parts; and this, for the time being, increases vitality by increasing the blood-supply; the low, imperfect nutrition of the parts being temporarily improved, with the consequence of removing, or at least relieving, the pain. But as no steps have meantime been taken to improve the quality of the blood, as well as to increase its circulatory activity, soon the old state of passive congestion is re-established, vitality is lowered, and the old miseries return. It may even be that the rest

in bed in hospital, and the better feeding which poorer patients get there, as compared with what they can obtain in their own homes, so improve the general and local nutrition as to have the effect (though the surgeon may not have had it in his mind) of driving away the pain for a very long time, if not altogether. But in respect of causing an increased blood-supply to the parts, operation on the umbilicus will have much the same effect as oöphorectomy, the benefit obtained from the latter operation being, therefore, *indirect, from the alteration of the muscular nutrition, and not direct, from the removal of the appendages*. In fact, I believe that any other operation on the muscular abdominal wall might have a similar effect.

This opinion one often hears expressed, and to it is appended another opinion, perhaps, that the patient is hysterical and her disease imaginary. In fact, the one opinion is advanced as an argument for the truth of the other. If any operation, it is said, would cure the patient, whether directed to the uterine appendages or not, obviously (so it is contended) the whole ailment is imaginary. I can imagine—nay, I have known it—that mere suggestion may cause such pain to disappear; but, granting the benefits obtained in both of these ways, I still entirely demur to the inference that we have therefore to do with hysteria. Suggestion, I believe, may for the time being excite a local circulation. If a patch of skin can be blistered through suggestion, it is not impossible that a local activity of circulation can be stimulated by it also. But even more quickly than the effects of operation pass off, do those of suggestion. For a few days, perhaps, patients can be relieved in this way, but very soon, unless something else is done, they relapse, and are as bad or worse than ever.

If that something else is done, there is no need of suggestion, and in any case a line of treatment which is at best of a doubtful character is best avoided.

It is difficult to define hysteria; but one of the very best definitions* I know, if it should not rather be called a description, is to be found in the words of Dr. Clifford Allbutt in his lectures on visceral neuroses. 'Take,' he says, 'a hysterical person, man or woman, in its common and, so far, proper sense; take it to mean a person of feeble purpose, of limited reason, of foolish impulse, of wanton humours, of irregular or depraved appetites, of indefinite and inconsistent complaints, seeing things as they are not, often fat and lazy, always selfish; or, to take it in a less degree, one capricious, listless, wilful, attractive, perhaps, yet having always the chief notes of hysteria—selfishness and feebleness of purpose; and if such persons complain of globus; of palpitation, which is never perceived by the stethoscope; of sleeplessness, of which the nurse has no record; of dyspepsia, which does not lessen the labours of the cook; of pains which never flush the cheek; and if such persons have or have had anæsthesia, unreal epilepsy, unreal syncope, unreal palsy, unreal cramps, then set down

* It has often occurred to me that the best definition that can be given of hysteria, if one can be offered at all, is that it is alternate congestion and spanæmia of the pneumogastric centre, and even of higher parts of the nervous centres. This definition would explain the laughing, crying, phrensy, followed by collapse, and the general instability of character, found in the men and women who manifest it. It is a good example of the badness of a functional name—'wombiness,' for instance, being totally inapplicable to men, and the disease being very rarely, I think, directly connected with that organ in women. This name, therefore, even as regards the anatomical organ alleged to be at fault, is wrong, but in such a name as epilepsy no reference is made to anatomy at all, and the name is purely functional.

such a person as hysterical, but forget not, nevertheless, to cure her mind and body.'

This masterly description commands our admiration. A little before this passage appears, he has stated that hysteria is on the whole a rare disease among the vigorous northerners of the West Riding of Yorkshire. In this I entirely agree with him. The vast majority of the women I see come to me because they are suffering from real pain, from real misery, which prevent them from doing their work, and because they want—nay, urgently insist on having—relief. If I were to go so far as to say that a diagnosis of hysteria is more generally a cloak for the ignorance of the diagnosing doctor than a fair or explanatory name for the patient's disease, I do not think I should be far wrong. People don't come to doctors—at least, they do not come to me—because they want to have a fuss made of them, or because they want to become notorious or to attract attention, but because they want to be cured of their ailments. At least, those who do so for the former reason are very rare, though no doubt I have seen one or two of them, both men and women. But to say that they are numerous would be to libel humanity.

If I go on to extract another graphic passage from the same lecture of Dr. Allbutt, and then to venture to give a somewhat different explanation of the case and of the method, the highly rational method, of its cure, I hope I shall not be accused of immodesty in criticising a writer so competent to teach, and from whom I have learned so much. The case is so well given, and its management is so well detailed, that I am able to draw attention to the very points I wish to emphasize, and so I hope to amplify the instruction it is fitted to convey.

‘Let us take,’ he says, ‘a young lady coming of a family in which great mental gifts had thrown into relief the many eccentricities and humours which accompanied them; a family, too, of which no household had been free from nervous disease. She possessed the gifts and the attractions of the neurotic diathesis, and laboured under its defects. It is possible, also, that she was in some degree under the stress of what Anstie called the unconscious sexual impulse. She was restless, excitable, and suffering. Her pains were mostly pelvic and abdominal.’ May I venture here to interpolate they were almost wholly muscular—myotic rather than neurotic; that her disease was a myosis rather than a neurosis? I think the sequel will prove it. To continue: ‘She never put her feet to the ground, partly because it intensified her pain, partly because she had been forbidden to do so. She had lain on her back for months. Pessaries had often been introduced, but, being intolerable to her, were withdrawn. Her periods were agonizingly painful for the first two days, and were profuse, and she had constant leucorrhœa. Her appetite was almost gone, her stomach queasy, her frame emaciated; but she was full of courage, unselfish, and would have scorned the wiles and exacting whims of hysteria. Her womb had been incessantly under specular and other examination for a year or two, and, like nearly all such patients, she had uterus on the brain. I found the vagina tender and the womb exquisitely so; its substance was soft and its attachments lax. Its position, therefore, was somewhat downwards and backwards. Acute suffering was caused in the upper hypogastrium when the fundus of the uterus was pressed upon her rectum. The rectum was full of fæces. By the speculum I noted there was both uterine

and vaginal catarrh, and that the os uteri was excoriated—in the state, that is, of the upper lip of a scrofulous and snivelling little boy. My most difficult task was to win my patient over to the belief that her disease was not entirely uterine, but mainly neuralgic.’ Why neuralgic? Was it not myotic or mysitic, rather? Dr. Allbutt treated the muscles by making them move in walking and riding; treated the muscles, that is, rather than the nerves. ‘This once accomplished, our progress, though slow, was sure. I declined to initiate any treatment whatever until she would get her feet to the ground, and thenceforth cautiously regain the use of her legs. Meanwhile, I declined to cure the ulceration of the womb for the twentieth time, but made her content with rectal and vaginal astringent douches, first hot and afterwards cold. As soon as she could walk we perched her upon horseback. She was treated with the phosphate and valerianate of zinc, with bromide of ammonium, iron, quinine, and like remedies, with occasional sedative suppositories. In six months I found the uterus more compact, the ligaments braced, and the os clean and sound; the leucorrhœa had ceased, and all the parts could be handled without pain. Menstruation was still painful, but less so than formerly, and there was some menorrhagia. She was mixing, however, in general society, could ride gently to hounds, had regained appetite and looks, and, although I then lost sight of her, I have every reason to suppose she is as well as she is ever likely to become.’

In this graphic description, which I could not hope to equal, let alone surpass, we have a picture of a kind of case all experienced men must have seen, and the management of it was as successful and as rational and as useful as

possible. But another explanation than that given by Dr. Allbutt is at least possible. Let us suppose that that young lady had been a poor woman working in a mill. Just such have I seen again and again; and they are those who are treated by self-movements of the muscles under pressure. After beginning with the help of the nurse or masseuse, they go on to self-treatment. This is exactly analogous to Dr. Allbutt's sage suggestion to the young lady to get on to horseback—for a short time, no doubt, at first, and for longer periods afterwards. This involved the use by the young lady of her own muscles, the weight of her body giving the means of making pressure-movements. But here also, just as in my cases, the course was adopted of inducing the patient to perform her own movements, not trusting to nurse, or masseuse, or doctor, whose function is to point the way in which the patient must herself go, not to take the journey, or do the work for her.

Of course, the diet is altered; the bread, that makes so soft, swollen, and flabby a tissue, is stopped almost entirely. And note how soft, swollen, and flabby the uterus was in Dr. Allbutt's case; he uses the very word 'soft' of the uterus, and speaks of laxness of the ligaments. No doubt the diet advised was nutritious—that goes without saying in that case—but it is most likely that before getting into Dr. Allbutt's hands the young lady had been capricious in her appetite, and very likely thought that a good, strong diet did not suit her. The menorrhagia was due to oozing or percolating of the blood through the soft, swollen, and flabby mucous membrane, and through the dilated vessels coursing in the soft uterine walls. That is the cause of the great loss of blood which so often characterizes these cases. The pain is caused partly by swelling, partly by

myalgia—rheumatic myalgia, I have no doubt—of the uterine walls, and partly, no doubt, by contractions of the uterus to expel the clots. No doubt, further, had inquiry been directed to it, tenderness—yes, and great tenderness—would have been detected, not only in the fundus uteri when examined through the rectum, but also in the muscles of the abdomen and of the pelvis—in the very muscles I have already so often drawn attention to.

Had this young lady consulted some surgeons, no doubt she would have been recommended to have oöphorectomy performed. Happily, nothing so barbarous was suggested. But if it had been performed, it would have had a most marvellous and magical influence on her ailments, for they would have disappeared. And so they would after an operation on the umbilicus—for the time, that is, for no doubt in a few weeks or months the symptoms would all have been back again. But Dr. Allbutt took the best means of curing the pained, under-nourished muscles. He made her walk and ride. I aim at getting women to walk, but find that self-movements of the muscles under pressure is the very best way (alternating movement with rest, of course, for perpetual movement is, as I have said before, as bad as perpetual rest) of preparing them for the exertion of walking, which is, again, preparatory to that return to work which is at once the aim of their visits to the doctor and the necessity of their lives. Movements stimulate vitality, increase oxidation, improve appetite, and lead to better spirits and better heart for work, by putting away the pain and aching which incapacitate them for it. No doubt the nerves sympathize, and improve as the muscles improve; but the heart and lungs and stomach also all improve coincidently. It would be as rational, I think,

to suggest that the ailment must have been mainly in the heart or the stomach because they improve in power and energy under the treatment, as to say the ailment is mainly in the nerves because they improve also. Fatigue, dull pain, aching, with occasional shoots and stabs—these are the symptoms most characteristic of disease in the muscular system; and fatigue, aching, dull pain, with occasional shoots and stabs, are what these women complain of rather than numbness, tingling and smarting, which are the chief symptoms of nervous affections. If we say that they suffer in both these sets of ways, I don't deny it; but I say that as a rule the former only are what they complain of, and when they do complain of both, the former greatly predominate.

It now only remains for me to describe one or two cases before ending these remarks. There is no difficulty in doing this. So numerous are the cases, indeed, that the difficulty is to make a wise selection. The first case I shall relate is that of a woman aged forty-two, the mother of several children, who had been under treatment for nine years off and on. She was told she had displacement, oöphoritis, and salpingitis. When neither pessaries nor douches nor rest relieved her, she was told that she would probably be better if she had another child. (This kind of advice, it seems to me, illustrates strikingly the haze and confusion of mind under which many medical men labour when treating these ailments, and how, when at their wits' ends to relieve their patients, they give all sorts of varying advice. I suppose this suggestion was hazarded on the theory that displacement of the uterus was the cause of the ailments of which the woman complained. Yet the treatment of the displacement had not relieved the patient. Surely that fact ought to have opened the eyes.

of the medical attendant. In saying this I am not reflecting on him particularly. I have in former years been quite as much at sea, and I dare say have advised patients just as foolishly.) Well, the arrival of a child did not relieve the patient, who remained as ill as ever. After that she had still another, but still without receiving any benefit. Finally, she was recommended to have the appendages removed, but would not submit to the operation. In the course of eight weeks that woman had so far improved under self-pressure movements as to be able to walk and work and take her place at the head of her family in a way to which she had been a stranger for many years. After having been at a watering-place, at my suggestion, for a month, she came back looking much better in health, but said to me: 'I have been telling my husband that, great as is the benefit I have received by change of air and scene, I think I should have benefited still more had I gone on with my exercises at home.' Of course she ought to have gone on with her exercises while away, as she was advised to do. Patients, however, often fail to carry out instructions after a week or two of absence from the doctor. And one of the great advantages of seeing a medical man, say once a week, is that he can keep patients up to the mark, and encourage them to persevere with treatment by showing them the marks of improvement, even although he cannot carry out for them the process of cure, which only they themselves can perform.

The next case I shall refer to is one on which I was able to effect a cure by an operation on the umbilicus, a method of treatment which I do not now recommend, but which, in the course of my inquiry into this puzzling affection, I was led to adopt in several instances with marked temporary,

and sometimes permanent, benefit. In April, 1890, I was sent for to see M. S., aged twenty-one, a pale-faced girl, assisting her mother in domestic work. She complained of abdominal pain, ilio-inguinal and lumbar, striking through to the back. She was easier in bed, but when she got up in the morning the pain began, and the more she worked the more severe became the pain. It was preventing her from doing her work or from having any enjoyment of her life. Finding this pain concentrated in the umbilicus, or at least finding that on my grasping the umbilicus between the fingers of two hands I caused intolerable pain, and thinking that I detected a minute opening there, I recommended an operation on the part. The umbilicus was cut down on, its edges rawed, and brought together with silkworm-gut sutures. The effect of this non-mutilating operation was entirely to cure the girl, who has remained well since, and has recently married. I should not now treat such a case in that way. I don't think such an operation necessary, although I have already explained its *modus operandi*; but, at any rate, it is an innocent operation compared with that of oöphorectomy, which unsexes a woman, prevents marriage often, or renders a woman sterile if she does marry. Although the immediate effects of the umbilical operation are often so strikingly beneficial, unfortunately many of the women relapse. This is, indeed, just what might have been expected, if I am correct in saying the ailment is in the muscles. That in turn is due to mal-assimilation of food leading to imperfect blood-supply, and no doubt possibly to insufficient exercise in the open air. Now, although in the process of healing an increased blood-supply is attracted to the muscles, and although the pain is thereby for the time relieved, the

increased blood-supply ceases when healing has been effected in, say, three weeks. If in the meantime no efforts have been made to improve the quality of the blood by alteration in the diet, etc., it is only to be expected that the old condition of imperfect nutrition will recur, and with it the pain on exertion of which the patient complained. That it did not do so in this case I attribute to the fact that the ailment was not of very long standing, and that the girl, belonging to a well-to-do family, probably altered her diet to a more nutritious one without that advice having been particularly emphasized by me. I have had some very remarkable results from this operation, as I have said, particularly in the case of a nulliparous middle-aged matron who had been all round the district for medical advice without any benefit. She was entirely cured by the operation, and the case made a great sensation. Nevertheless, if I had to see her to-morrow for the first time, I am certain I should not recommend operation, and I am equally convinced I could cure her by self-pressure movements. I am the more certain of this that the same result has been achieved in many cases I could refer to, without operation of any kind, and even when distinguished men had thought that nothing short of removal of the appendages was indicated.

In another case of a certainly very neurotic woman I removed an ovary on one side with the effect of entirely removing the pain for a time. But in a month or two the pain had returned, and *on the same side*. She came back saying she wished I had removed the appendages on both sides when I was at it. I did not agree to her suggestion, failing to see that the double operation could possibly help her when the pain had recurred on the same side as

that on which the operation had been performed. But finding her to be of a very neurotic temperament, and finding that she had already been in the hands of a hypnotist, I thought hypnosis or mesmerism might again help her. I subsequently saw this girl have several teeth extracted without wincing or any manifestation of pain when in the hypnotic state. Not being able to find the time myself to hypnotize her, I referred her to a medical friend, who very kindly undertook the duty for me. He gave her many sésances, extending over a good many weeks. There were difficulties in the case, specially in this, that the professional hypnotist who had previously operated on her had told her that no one else ever would be able to influence her in this way. She entirely believed this, and told me that my friend never did get her completely into the mesmeric or hypnotic state. He, on the other hand, thought that he did. However this may have been, he succeeded by suggestion in removing her pain, and she remained free for several weeks. This was certainly remarkable enough to make me doubt very much the wisdom or necessity of my previous mutilating operation. Most certainly, had I to begin to deal with her again for the first time, I should not oöphorectomize her.

My friend told me he found her suffering from hysterical anæsthesia of the pharynx, and this is one of my reasons for saying she was, and is, a highly neurotic subject. Other reasons were her general aspect, manner and behaviour—things almost impossible to put into words, but which every experienced medical man knows and recognises when he sees them. But her ailments, I have no doubt, were very real for all that. The strangest part of the story is yet to come. She returned to me, and became again an in-patient of the hospital. I found great tenderness at the umbilicus,

and thought I detected a minute opening there. I recommended an operation for the closure of the 'umbilical rupture without hernia,' as I thought it. She consented, and *for several months now has remained quite well, and is acting, I am told, as a sort of nurse.* Every day I am expecting to hear she has relapsed, but up to the present she has not done so. Still, I do not recommend the operation on the umbilicus. I certainly do not recommend oöphorectomy, single or double, in such a case; and had I to commence the treatment of this woman to-morrow, I should neither perform oöphorectomy nor excise her umbilicus, and have very little doubt I could cure her by self-movements under pressure. If she comes under my care again this is undoubtedly the course I shall adopt.

I should like to refer to one or two cases now in which oöphorectomy has been performed without relief to the patients. It is not a pleasant thing to admit this, even to one's self, but if it is true it must be stated. A middle-aged multiparous matron was operated on by me some years ago for this affection. There was no coarse, gross disease in the ovaries, although some small cysts were shown. I may say I had several consultations about the case, and did not perform the operation without much care and reflection on the case. Such cysts as were found often exist in the ovaries of women going about their daily avocations without any damage resulting. The woman made a bad recovery, nearly dying at one time from an attack of intestinal obstruction, due, I imagine, to adhesions of the stumps to the intestines, or probably to some like cause. After recovering she still had pain in the abdomen, not the same deep-seated pain, she said, but such as to partially cripple her and prevent her from fulfilling her domestic duties.

She had no real relief from the operation, and is now, I believe, more or less of a wreck.

These two cases, and others I could mention, make me feel that the operation of oöphorectomy often fails to cure the women. Medical friends who have watched the effects of movements in some of my cases have said to me, 'Yes, the woman is better, but how long will she remain so? How long will the effect of your movements last?' The only answer to that must be, 'Time will show.' But a very forcible reply often is, or might be, 'How long do you suppose that the effects of oöphorectomy would last?' And there is surely this great difference between the two methods of treatment, that oöphorectomy is a mutilating and unsexing operation, while auto-piësto-myo-kinetics is not. And if a woman relapses after oöphorectomy, what more can be done for her? Little or nothing; while if she relapses after auto-piësto-myo-kinetics we can put her through another course, or can put her on the Weir-Mitchell treatment, she remaining a whole and un mutilated woman who may yet marry, if she will, or if married may yet have children. There is simply no comparison between the two methods of treatment. But the whole discussion becomes inept if I am right in saying the ailment is not ovarian at all, but muscular; and that it is very frequently muscular the most sceptical ought, I think, now to admit.

There is still another class of cases of which I have seen several instances. Women often come to us suffering from what I have called perimysitis rheumatica universalis, who have also some other gross, coarse tangible ailment. Such a one I have just had under treatment, and her case shows how careful we ought to be in making at least one careful vaginal examination, although I suppose all medical

men feel that the seldomer this is done the better. Still, we must satisfy ourselves. On making this routine examination at my first interview, I found a left-sided cystic tumour about as large as a hen's egg. For this only one method of treatment was available, and accordingly she had it removed by abdominal incision. It turned out to be a left parovarian cyst, starting in a warty papilloma. But in addition the patient had general perimysitis and periostitis rheumatica, with some albuminuria and a very small urethral caruncle, symptomatic, I have no doubt, of the state of disease in which the urinary tract was higher up. She had, no doubt, what so many of these women have, and what they nearly all get, sooner or later, nephrocystitis. As I have said, this is probably due to the passage through the kidneys of a too acid urine, such as turns blue litmus paper to a fiery brick-red colour.

Now, if I had contented myself with the removal of the tumour in this case, as at one time I should certainly have done, and had I not treated the perimysitis by self-movements under pressure as soon as her state would allow me, combating the albuminuria also by suitable diet and regimen, I feel sure I should not have been able to do anything like so much good as I did. We are too apt to attribute all the pelvic symptoms a woman may have to the presence of a pelvic tumour, and to be disappointed therefore, when removal of the tumour does not dispel the backache, pelvic pain, bearing down, etc., from which the patient suffers. Still more are patients disappointed when this misfortune occurs. They are usually told that 'all these symptoms will pass off as strength returns; the cause has now been removed, and, no doubt, all will be well by-and-by.'

But sometimes it is not so, and the woman does not get

well, although the alleged cause of her troubles has been removed. Too often the tumour is not the cause of the complaints. It would, in fact, very often be much nearer the truth to say that the tumour and the perimysitis are the concomitant effects of the state of malnutrition in which the patient is, and that therefore removal of the tumour can no more be expected to cure the perimysitis than curing the perimysitis could be expected to remove the tumour. But to remove the tumour *and* to treat the perimysitis *and* to alter the patients' diet and regimen is rational treatment, and such rational treatment as will in the great majority of instances enable us to cure our patients; at least, if they do not get well, it will be because we ought to have recourse to means still more general and fitted to deal with the general state of the patient. In one word, to recur to a principle referred to in the preface, we must reach the pelvic troubles through treating the woman rather than attempt to cure the woman by treating her pelvic troubles.

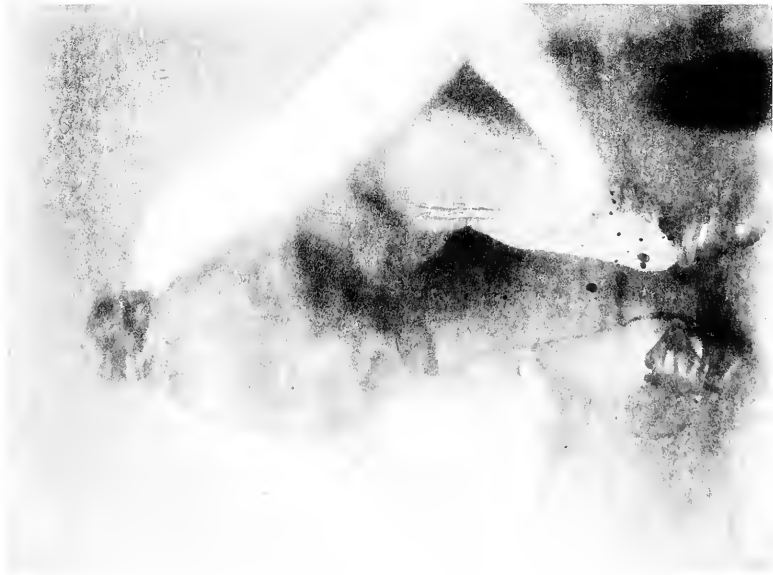
In bringing these remarks to a conclusion, I feel sure I am expressing the general sense of the profession when I state strongly the opinion that removal of the uterine appendages for what has been called neurosis is an unjustifiable operation; that it has been far too often performed I am quite sure, and I think this must be a general conviction, because so large a number of medical men have agreed with me when we have discussed the question in private. From what I have seen, I feel certain that there are many women in England who would have been better to-day, or at least no worse, if this mutilating operation had never been performed on them. If what I have said in the foregoing pages shall have the effect of displacing the

names neurosis, neurasthenia, ovaralgia, and the like, in favour of mysitis, perimysitis, osteitis, pseud-arthritis, and arthritis rheumatica, or of substituting the name myalgia for neuralgia, and therefore of emphasizing in the very name of the disease the reasons why removal of the uterine appendages cannot possibly cure the affection—although I have shown how both this operation and my own on the umbilicus may, and often do, much relieve the symptoms for a time—if, I say, what I have written shall to some extent aid in bringing about this most desirable result, I shall feel more than rewarded.

THE END.



No. 1.



Auto-piosto-myokinetics of gastrocnemius and soleus muscles.

No. 1.



Self-movements of the muscles of the calf, under pressure.

No. 2.



Auto-piosto-myo-kinetics of quadriceps extensor muscles.

No. 2.



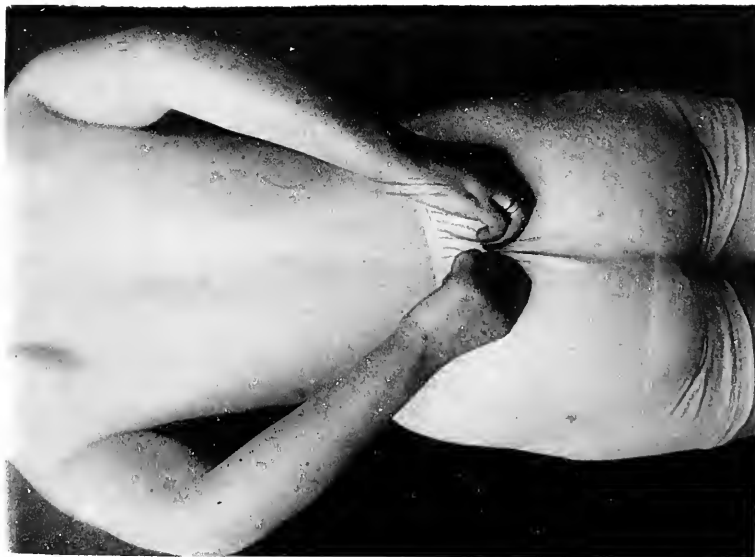
Self-movements under pressure of the muscles of lower part of thighs.

No. 3.



Self-movements under pressure of the false joint of the back, and of the muscles of the buttock.

No. 3



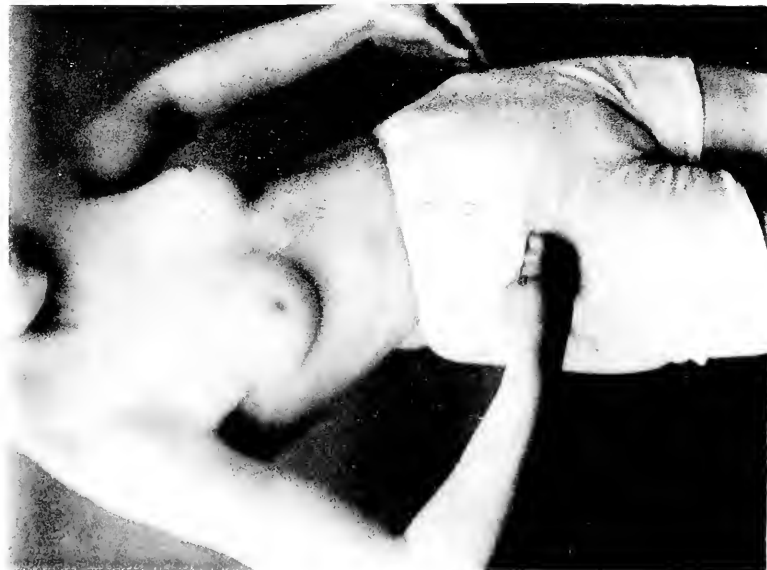
Auto-psycho-kinetics of sacro-iliac-synchondroses, and of sacral origins of gluteus maximus muscles.

No. 4.



Self-movements under pressure of the muscles of outside of hips

No. 4.



Auto-piosto-myo-kinetics of the gluteus medius muscles.

No. 5



Auto-piosto-myo-kinetics of oblique muscles of abdomen
and of sacro-iliac synchondrosis simultaneously.

No. 5.



Self-movements under pressure of the side-muscles of the
lower body, and of the false joint of the back simul-
taneously.

No. 6.



Self-movements under pressure of the front straight muscles of the abdomen.

No. 6.



Auto-piosto-myo-kinetics of the recti muscles of abdomen.

No. 7.



Self-movements under pressure of the muscles of the front of the arm-pit.

No. 7.



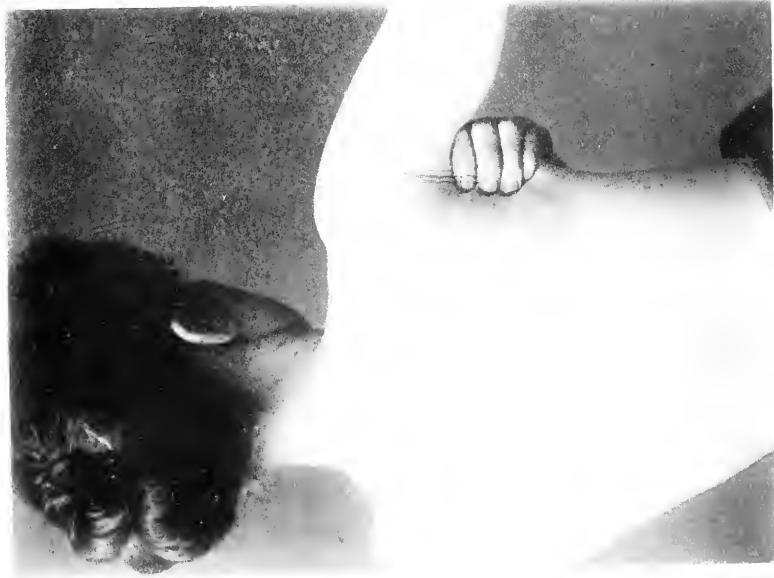
Auto-piosto-myo-kinetics of pectoralis major muscle.

No. 8.



Self-movements under pressure of the muscles of the
back of the arm-pit and shoulder.

No. 8.



Auto-piosto-myokinetics of latissimus dorsi, teretes and
infra-spinatus muscles.

No. 9.



Auto-piosto-myo-kinetics of splenius colli and trapezius muscles.

No. 9.



Self-movements under pressure of muscles of back of neck and shoulder.

No. 10.

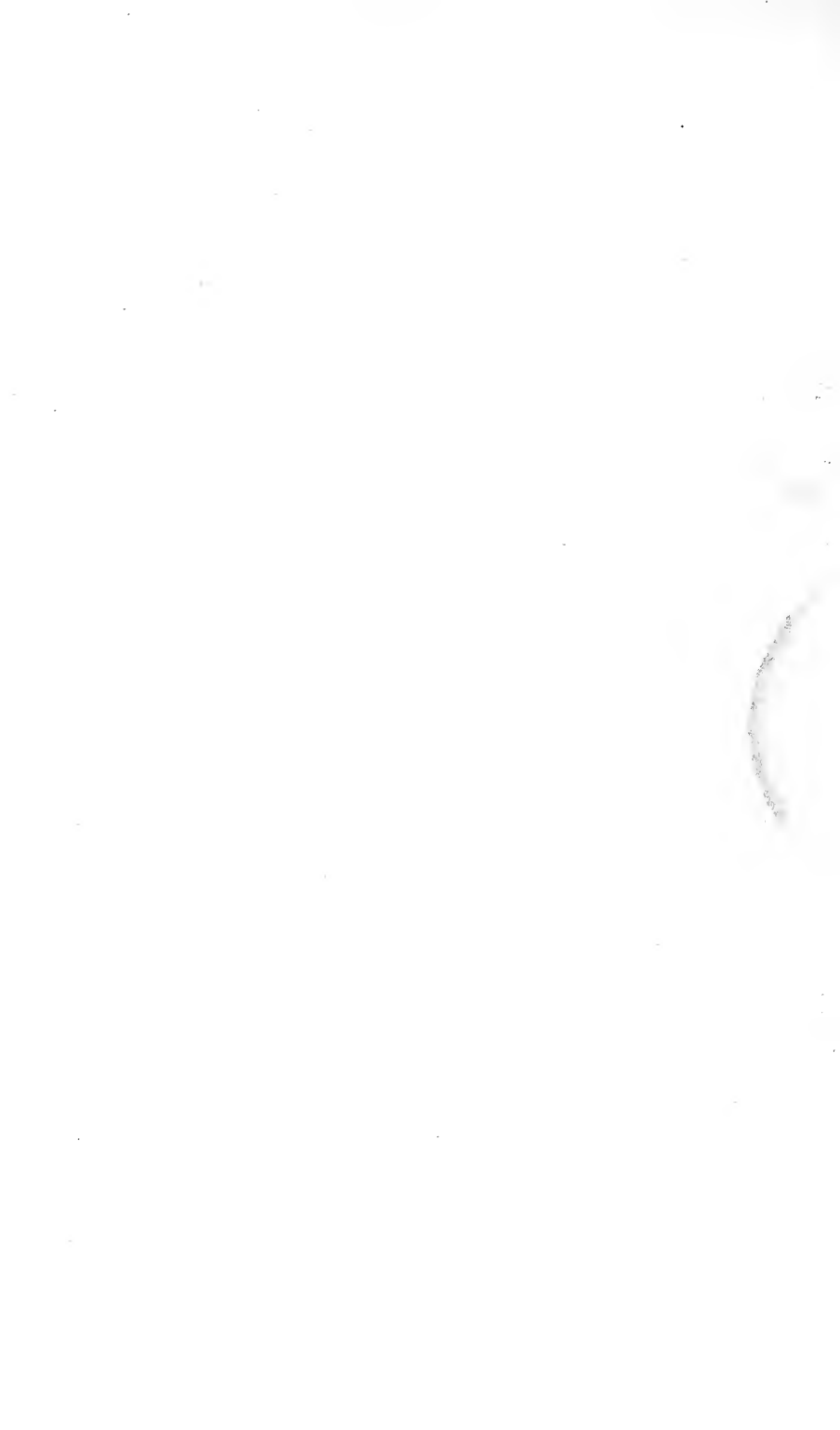


Auto-piosto-kinetics of articulation of mandible.

No. 10.



Self-movements under pressure of the lower jaw.



No. 11.



Auto-piosto-myo-kinetics of sterno-cleido-mastoid muscle





